You'll love our power-mitersaw work station...Page 56

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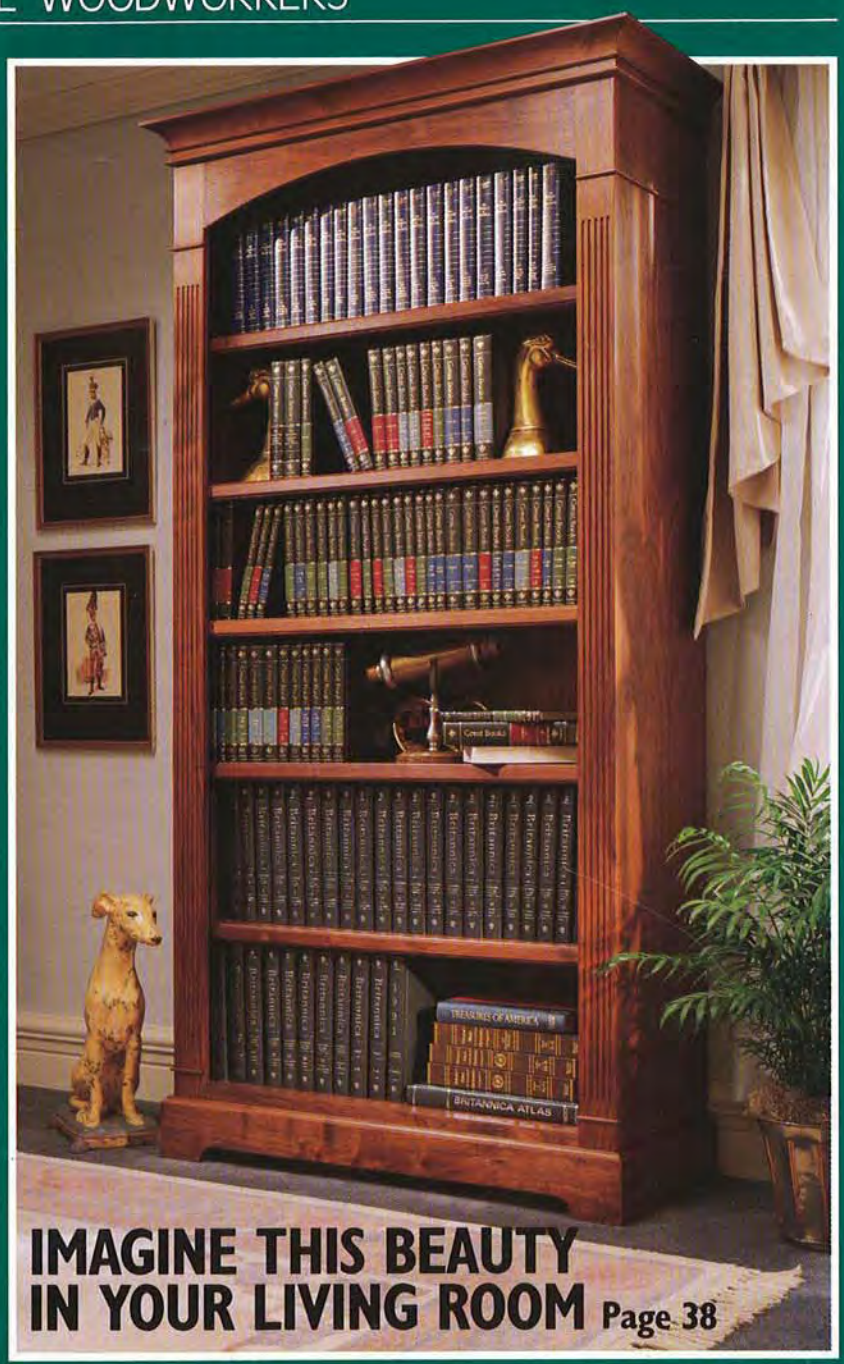

IMAGINE THIS BEAUTY IN YOUR LIVING ROOM Page 38

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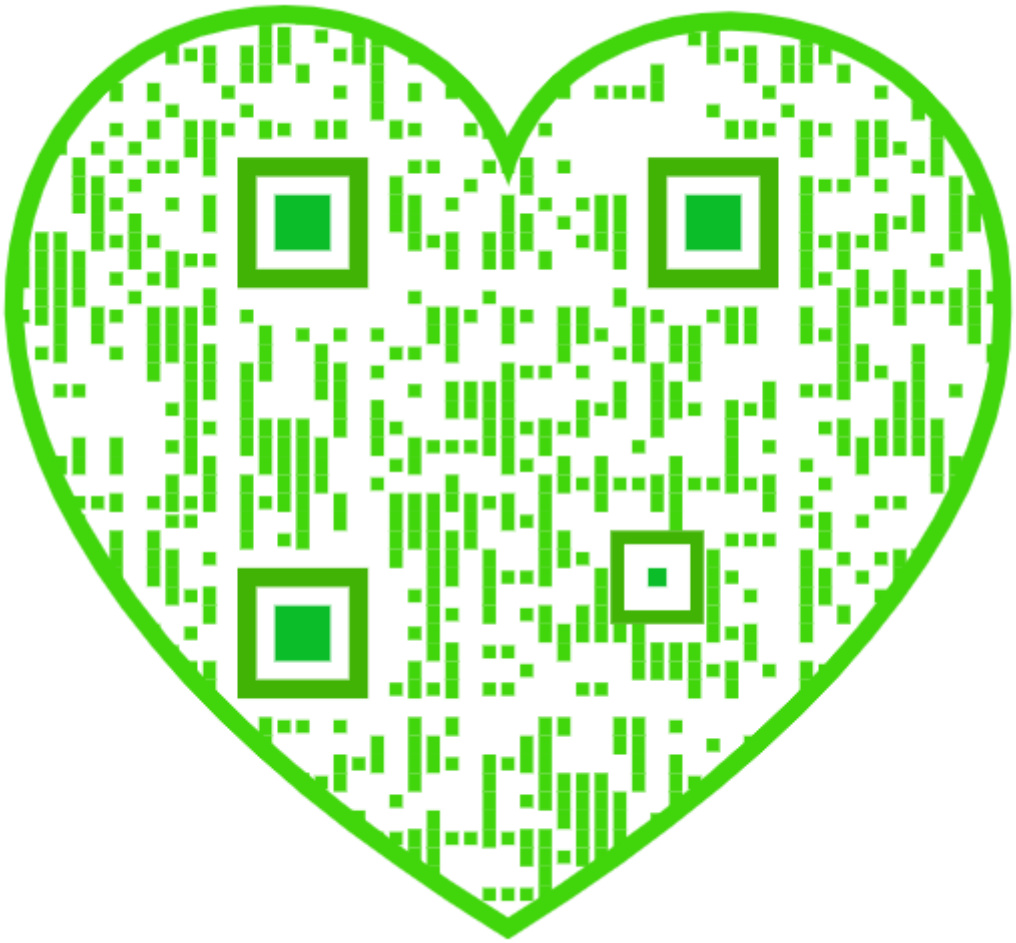

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THE EDITOR'S ANGLE

OUR ART DIRECTOR, YES...

AND ONE HECK OF A WOODWORKER, TOO!

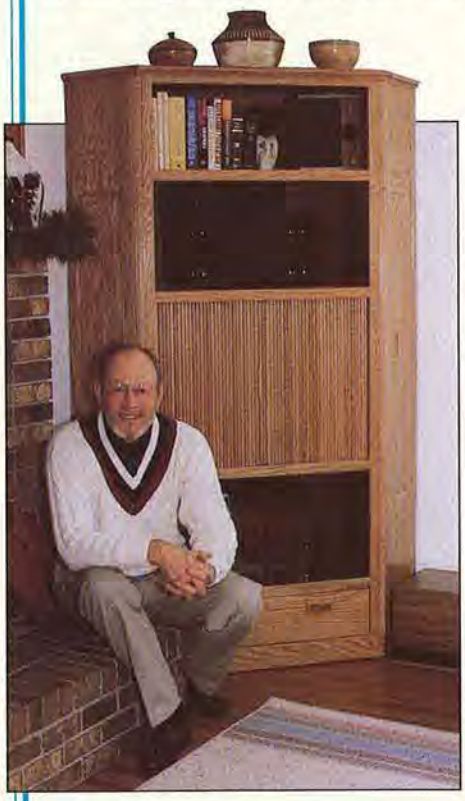
I often have used this space to write about the woodworking exploits of various *WOOD*® magazine staffers. But you haven't read much about Lee Gatzke, our art director. Lots of readers have told us how well they like the look of our magazine, and Lee can take much of the credit for that. He and Assistant Art Director Perry McFarlin have done wonders making *WOOD* magazine as exciting graphically as it is editorially.

Lee also is one heck of a woodworker. He does have a bit of an advantage on most of us, though. Trained as a commercial artist, he can visualize a project and get it down on paper in a hurry. And being a designer, the projects he cooks up look great, too.

Lee seems to especially enjoy designing and making turning projects. (Keep your eye out for his music box and potpourri bowl in upcoming issues.) But he builds lots of other pieces as well for use around his house. The oak entertainment center shown here is a good example of his special talents. Beautiful, don't you think?

Like many of us, Lee always has a project of some kind going. In the case of the entertainment center, he long had been wanting to buy a modular stereo system to enjoy with his wife, Nancy. But since the only place available in his family room to store the gear was a corner, coming up with the right design proved tricky. "Everything worked out just like I wanted it to, though," Lee reports. "And best of all, Nancy loves it."

Now, there's a woodworker who knows how to keep the peace at home. Nice going, Lee!



Lee Gatzke and his custom-made entertainment center, complete with a tambour front and cassette storage on both sides.

Larry Clayton

Photograph: Lee Gatzke

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This issue's cover wood grain: cottonwood *Cover photo: Wm. Hopkins*

FEBRUARY 1992 ISSUE NO. 50

CRAFTSMAN CLOSE-UP
Meet the master illusionist of relief carving 33
Just imagine being able to make a 1¼"-thick carving look three-dimensional! One-of-a-kind carver Rick Harney knows how to, and he's ready to tell all.

Shelving showcase 38
Give your old classics or prized book sets pleasing display with this stately walnut bookcase. It features a traditional fluted face frame, a richly molded top, and six roomy shelves.

CARVING
Decorative carving, Swiss-style 44
Learn the basics of chip-carving from expert Wayne Barton, and then, using only two knives, try your hand making his beautifully ornate weather-station design.

TOOL BUYMANSHIP
Power mitersaws 48
These mighty crosscutters offer accuracy and portability, and chances are good that you can find one that suits your wallet. Here's the lowdown on over two dozen models.

Custom mitersaw cabinet 56
Outfit your power mitersaw with this long-armed work station. It features a mobile scrap bin, trusty table extensions, and a stopblock.

Logging along the mighty Mississippi 62

Travel to the banks of the Big Muddy with us for a visit with the ecology-minded Anderson-Tully Company, a major producer of quality North American hardwoods.

SANDBOX SERIES

Rough 'n' ready wrecker 68

With this tough, on-call, little tow truck, your youngster can pull a disabled toy vehicle quickly and easily to the nearest service station. See the plans inside.

TURNING

Green-wood turning 72

If you think of woodturning as a showdown against a hard, dry, unyielding chunk of wood, dip your gouge into some tree-fresh stock.

THE CRAFT SHOP

Short-Branch Saloon 76

This spring, welcome back the neighborhood wrens by building our decorator frontier-style birdhouse. They'll whoop it up when they see it.

Be mine, valentine 78

On February 14, rekindle romance in your life by surprising your sweetheart with this charming scrollsawed memento.

Save a whale 80

You don't need a shore home to display this nostalgic nautical decoration. But you will have a whale of a good time making and painting it.

SHORT-SUBJECT FEATURES

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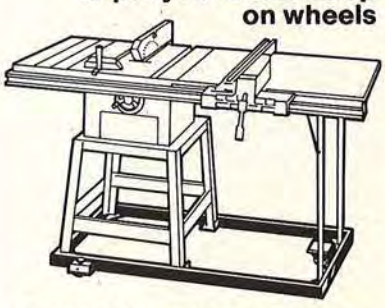

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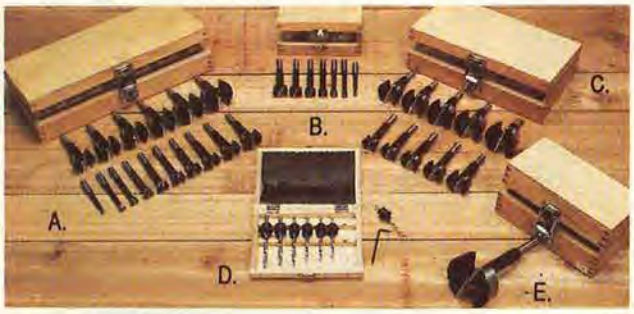

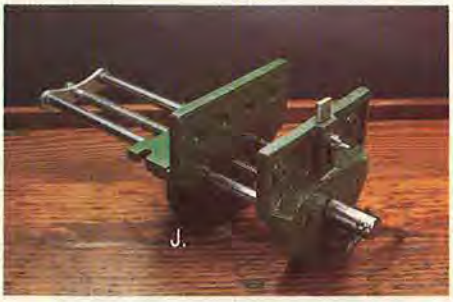

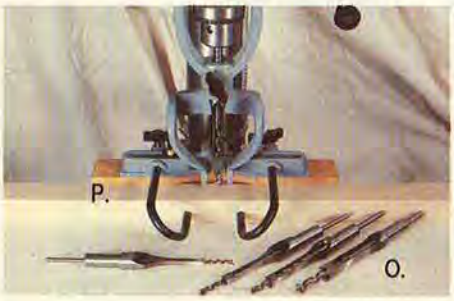

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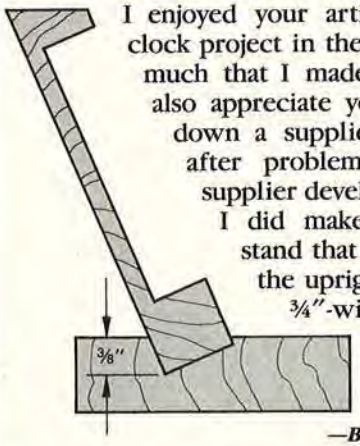
TALKING BACK

We welcome comments, criticisms, suggestions, and even compliments. Send your correspondence to: Talking Back, Better Homes and Gardens® *WOOD*® magazine, P.O. Box 11454, Des Moines, IA 50336-1454.

Reader modifies calendar/clock plan



I enjoyed your article on the calendar/clock project in the August 1991 issue so much that I made three of the units. I also appreciate your effort in tracking down a supplier for the mechanism after problems with the original supplier developed.

I did make one change in the stand that made it easier to glue the upright to the base. I cut a ¾"-wide dado in the base at a 65° angle, and left the bottom of the upright square.

—Bill Alven, Philadelphia, Pa.

For any of you who missed the substitute source for the electronic calendar/clock mechanism, you can order one for $19.95 ppd. from New Products, 15 West Street, Spring Valley, NY 10977. Identify it as the calendar/clock for the WOOD *magazine project. Sorry, no telephone orders.*

Garrett Wade also carries Eakes' book

I just wanted to respond to a couple of things in your October 1991 issue. Jon Eakes' book *Fine Tuning Your Radial-Arm Saw* is available from our catalog (ask for item No. 96L05.02) for $14.50 ppd. Also, concerning your article on slow-set epoxy, when I want a slow-set waterproof structural adhesive, I prefer phenol-resorcinol, a time-tested product with a working time of up to 3 hours.

—Henry Lanz for Garrett Wade Company, Inc.

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—Frank Borges, Waterford, Conn.

Continued on page 6

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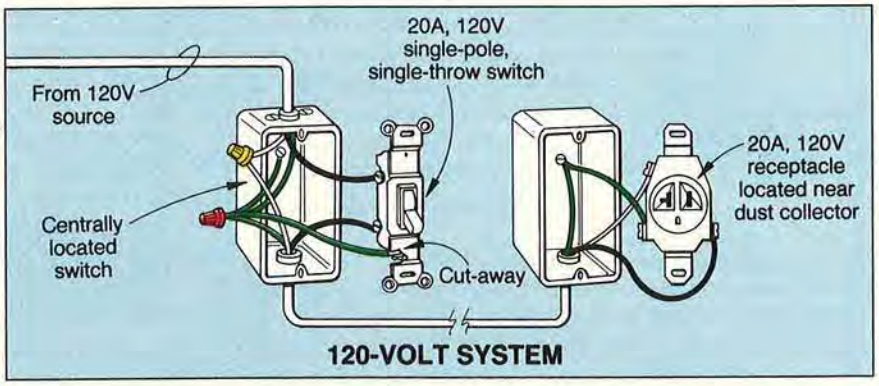
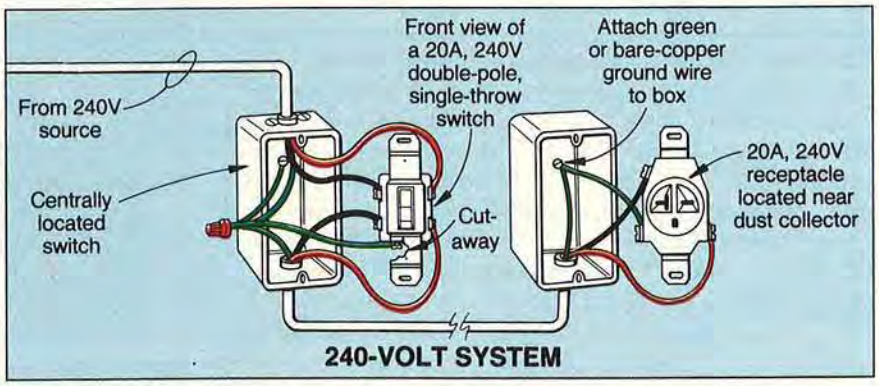
TALKING BACK

Continued from page 5

Wiring diagram correction corrected

In the June 1991 issue, we published an incorrect wiring diagram for a remote dust-collector switch. In September 1991, we printed in this column a "correction" based on a schematic drawn for us by a certified electrician. Again, we weren't entirely correct. So now we have had the remote switch reengineered by electrical consultant Ron Tesdell and verified by the service department of Puckett Electric Tool, Inc. The drawing is for conduit installation instead of flexible cable. That's because we don't know whether the installation you have in mind will be surface mounted or in a wall. We have included Ron's materials list for both 120-volt and 240-volt service. The list calls for parts by brand name, but you can ask your supplier for equivalent parts. The parts and diagrams also are suitable for 110-volt and 220-volt installations.





120-volt system switch materials list

- P&S 20-amp SPST switch 20AC1
- P&S 5351 20-amp 120V receptacle, NEMA 5-20R
- RACO 660 Handy Box
- RACO 865 Handy Box Switch Cover
- RACO 863 Handy Box Receptacle Cover
- #12 THHN Black Solid Wire
- #12 THHN White Solid Wire
- #12 THHN Green Solid Wire
- Conduit, ½" EMT, with appropriate fittings
- IDEAL wire connectors, yellow and red
- RACO 973 Ground Screws

240-volt system switch materials list

- P&S 20-amp DPST switch 20AC2-hp
- P&S 5851 20-amp 250V receptacle, NEMA 620R
- RACO 660 Handy Box
- RACO 865 Switch Cover
- RACO 863 Handy Box Receptacle Cover
- #12 THHN Red Solid Wire
- #12 THHN Black Solid Wire
- #12 THHN Green Solid Wire
- Conduit, ½" EMT, with appropriate fittings
- IDEAL wire connectors, red
- RACO 973 Ground Screws

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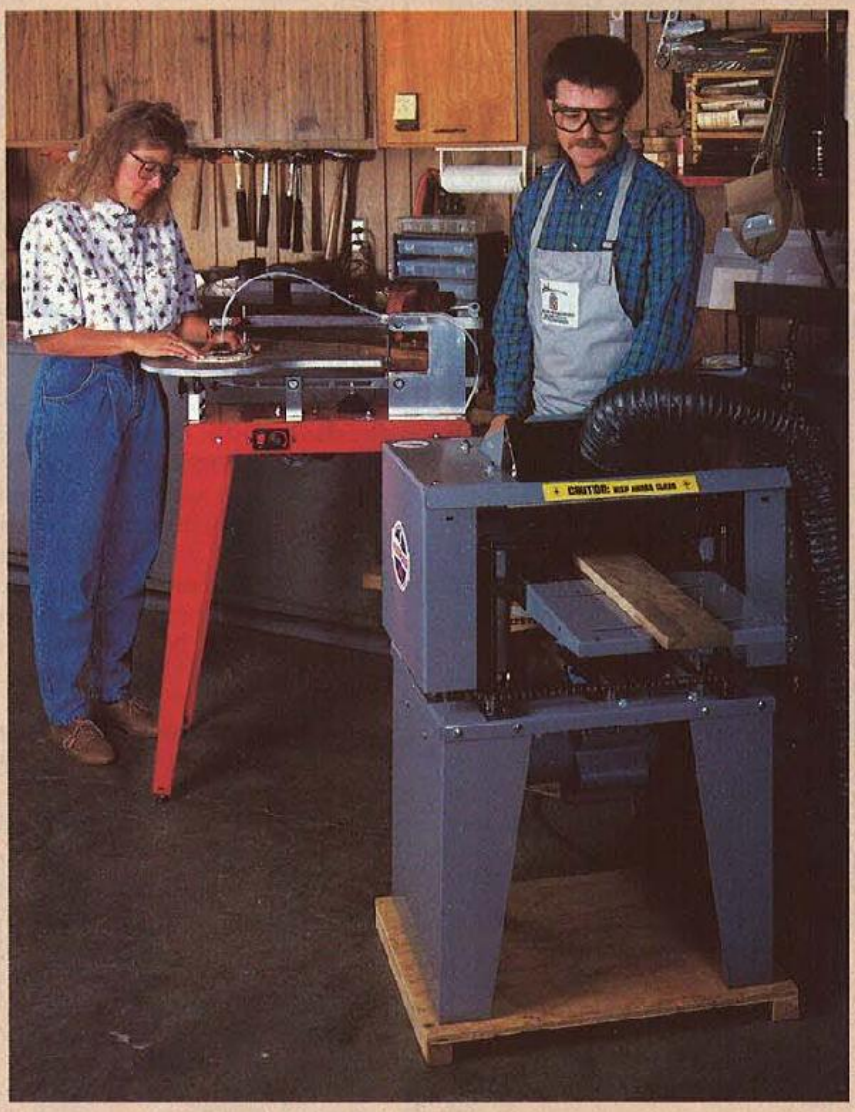

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TALKING BACK

Continued from page 6

In-Line product review is right on target

In-Line Industries' Special Performance Package, reviewed in the September 1991 Products that Perform section, lives up to all the claims made about it. After installing the new turned pulleys and belt on my 1977 Sears 10" tablesaw, it is better than new. It has more power, yet it vibrates so little that I can stand a nickel on edge on the table and cut wood without knocking the coin over. Please keep up the good work by testing products and telling your readers about them!

—William E. Brader, Warren, Pa.

Two solutions to the bleeding oil-based finishes

Here's an easier way to keep red oak that's been finished with Danish oil from bleeding (Ask *WOOD*, October 1991). Add 6-10 tablespoons of Japan Drier to a quart of oil stain. This will cause the stain in the open-grained wood to dry very quickly. This also works with mahogany, which also bleeds sometimes. If your paint dealer doesn't stock this drier, he should be able to order it. Be sure to try this on scrap before trying it on your project.

—Robert Mikkelsen, Salinas, Calif.

Behlen's Japan Drier, 1 pt. Catalog No. B700-1805, $12.01 ppd. from Wood Finishing Supply Co., 100 Throop Street, Palmyra, NY 14522-3743; phone 315/597-3743, and ask for the free finishing booklet.

About bleeding from oil-based stains: Applying stains in a room warmer than 65 degrees could contribute to the problem. Keep your workpiece away from heat sources such as forced-air heat, sunlight, or a fireplace. Also, set the piece being dried on narrow scrapwood sticks to promote air circulation all around it.

—Mrs. Don Lundquist, Hackensack, Minn.

Product Guide disappoints this subscriber

Your November 1991 issue of *WOOD*® magazine is a big rip-off. To call this a special edition is an insult to your subscribers. This issue is simply a collection of advertisements. If you repeat this type of issue in the future, you can expect my subscription cancellation the next day. I subscribe to five woodworking magazines. Keep yours the best.

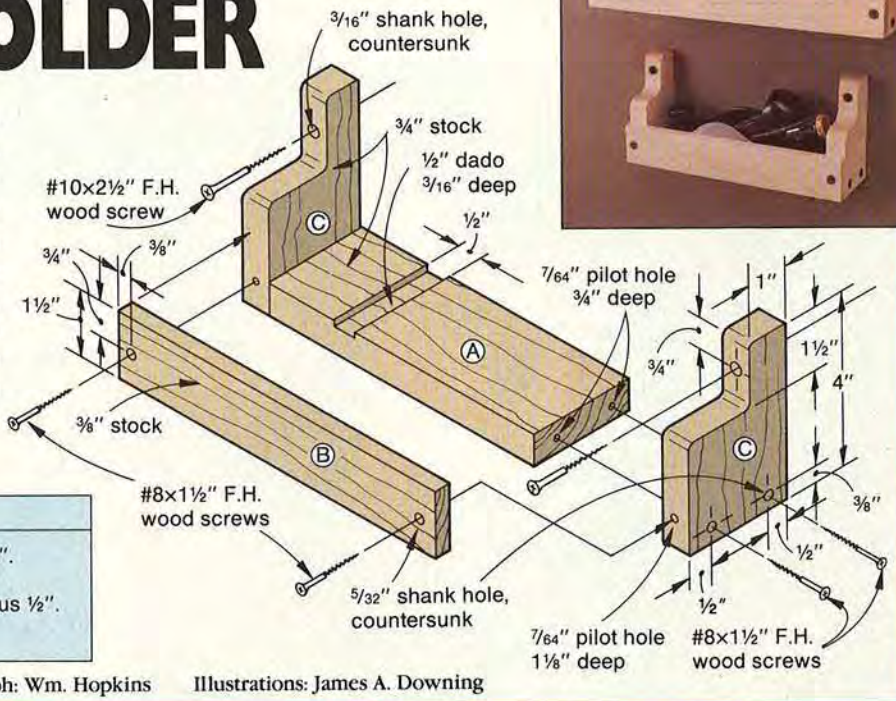
—Charles Ley, Lynbrook, N.Y.

GREAT IDEAS FOR YOUR SHOP

Print this article

PLAIN-HANDY PLANE HOLDER

Like all precision tools in the shop, your planes need and deserve safe, sturdy storage. Consider this adaptable wall-hung organizer the answer, regardless of which size planes you may own. Using the design shown and the notes *below,* you can build these holders from scrapwood. Then, secure them to your shop wall. We included a dado in the base (A) to protect the plane blade from damage.



Construction Notes

Length of A equals length of plane plus ½".
Length of B equals length of A plus 1½".
Width of A and C equals width of plane plus ½".
Center the dado in A under plane blade.

Project Design: Kevin Heilman Photograph: Wm. Hopkins Illustrations: James A. Downing

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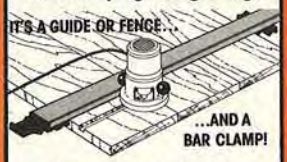

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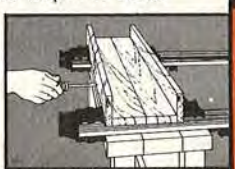

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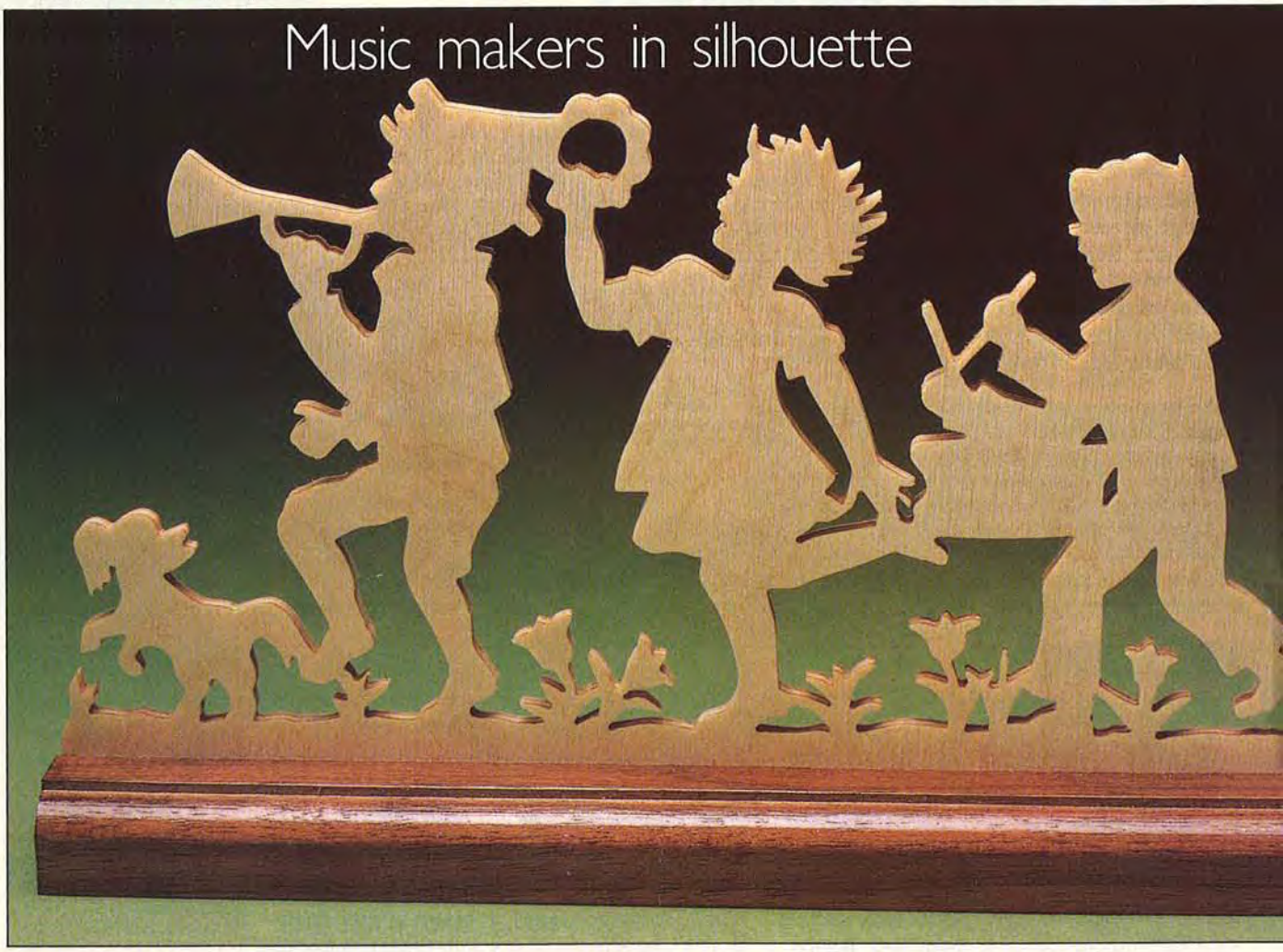
KIDS ON PARADE

Music makers in silhouette



Don't let the parade pass you by. Tighten your scrollsaw blade to just the right note, and then pitch in to cut out this energetic marching band in silhouette. Go ahead and whistle while you work—these kids would understand.

Print this article

You'll need *⅛ × 5 × 9½" hardwood stock or plywood (we used Baltic birch plywood) for the cut-out and ¾ × 1½ × 8¾" hardwood stock for the base. The small inside cuts on this pattern call for a scrollsaw that accepts plain-end blades. (We used a #5 blade, .035 × .015" with 15 teeth per inch.) If yours doesn't, ask your tool dealer if blade holders are available to adapt your saw to take plain-end blades.*

Photocopy the full-sized pattern on the *opposite page*. Attach it to your stock with spray adhesive.

Thin stock lends itself to stack-cutting, so you could cut several bands at once. In fact, you can saw up to five pieces at a time. Hold them together with tape or brads driven into waste areas.

Not only will you have extras for friends, but you'll also find the cutting more controllable. You'll be less likely to cut off the fine details when you work with a thick stack of material.

Drill 1/16" blade start holes where indicated on the pattern. Then, begin cutting out the smallest inside details, such as the spaces between the drum and the

drummer or between the youngsters' feet and flowers. Progress to larger details, and cut the outside line last.

To make a base for your silhouette, cut a piece of hardwood (we chose walnut) ¾ × 1½ × 8¾". Saw a ⅛" blade kerf ¼" deep along the middle of the topside with a tablesaw. Round the base's top edges with a ¼" round-over bit in a table-mounted router.

Mount the silhouette in the slot and finish. We sprayed on clear lacquer for a natural finish, spraying from several angles to cover all the inside edges.

Design: Elaine Hutcheson, Paper Cut Art, Virginia Beach, Va.
Illustration: Mike Henry Photograph: Hopkins Associates

How to build a sound

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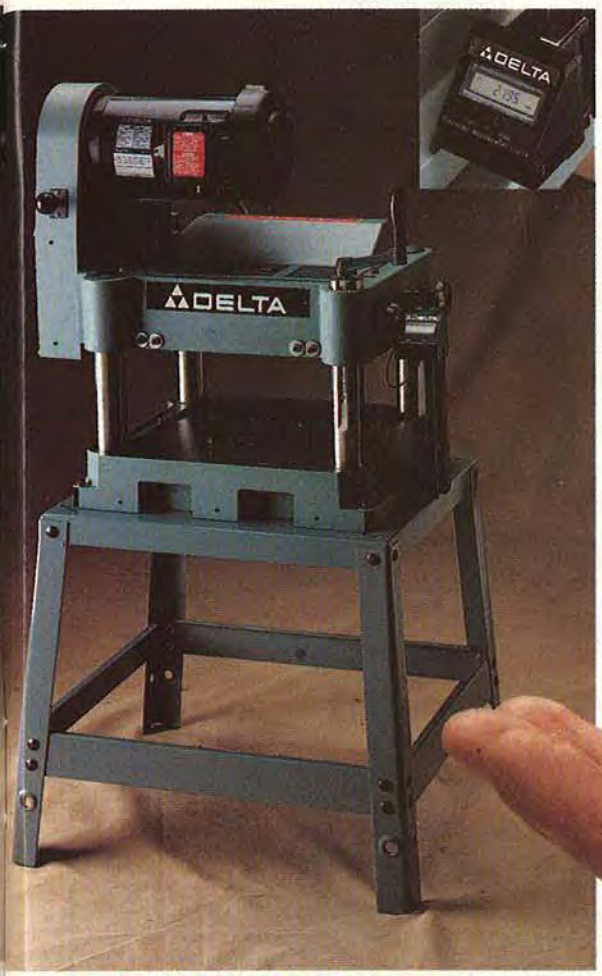

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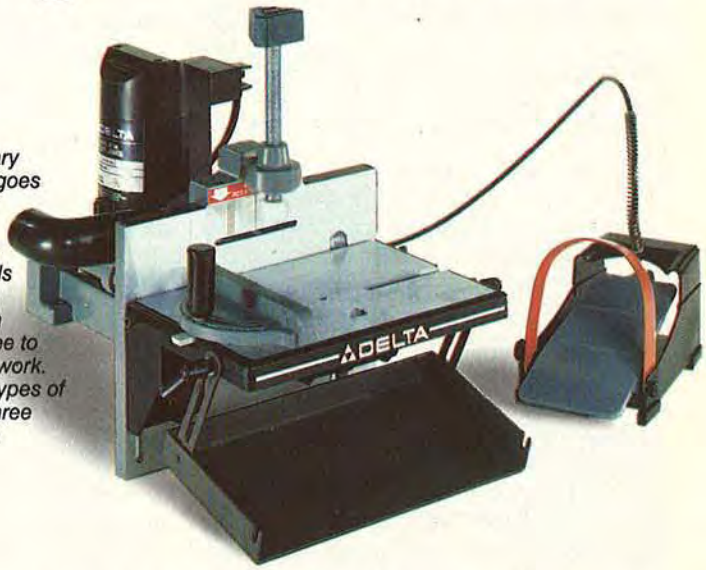

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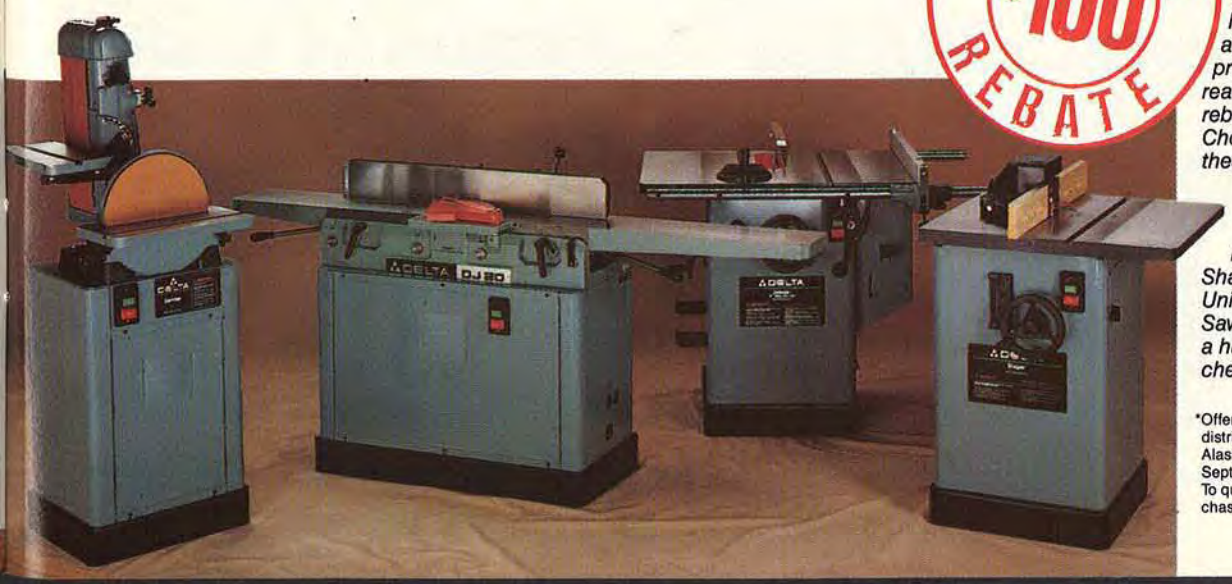

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Old glove finger protects carver's thumb

As careful as you are, it's all too easy to gash your thumb while carving. Wearing a glove is just too clumsy, though.

TIP: Don't wear the entire glove, just a part of it. Cut the fingers from an old leather glove before you throw it away. Then, just slip one onto your thumb whenever you carve. Always endeavor, of course, to keep your thumb and fingers out of harm's way.

—Maurice Anderson, Denver, Colo.

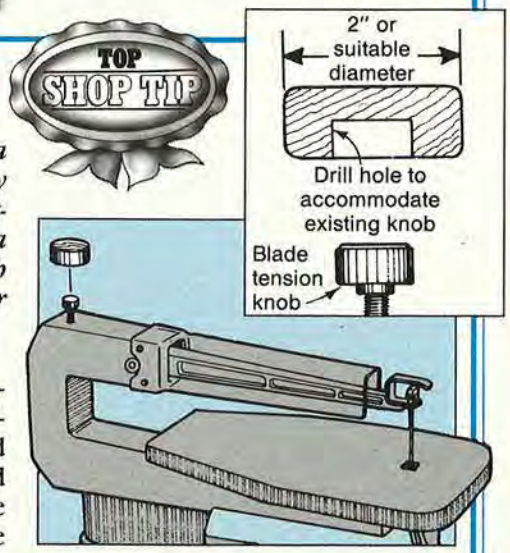
Bigger knobs enable easier adjustments

Sometimes, you just can't grip a small adjustment knob firmly enough to turn it. Pliers will batter it up in no time, particularly a knob you adjust frequently, such as the scrollsaw blade tensioner shown right.

TIP: Cut a disc from ¾" scrapwood with your holesaw (a 2"-diameter one works well). Round over the edges for comfort and safety. Bore (or scrollsaw if the knob isn't round) a hole in the center to fit tightly over the troublesome knob, and then glue the big gripper in place with epoxy.

For even heftier knobs, use thicker stock. Or, add style by starting with laminated discs.

—Bob Thompson, Harrisburg, Pa.



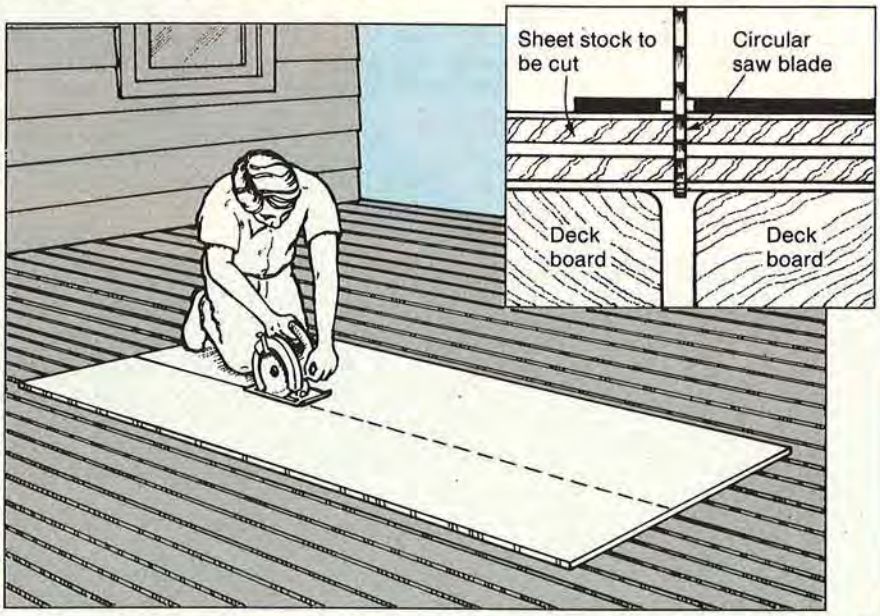
For his winning tip, Bob will receive a Skil Professional plate joiner kit, model 1605:02.

Panels won't defeat you if you deck them first

Wrestling sheet goods around in a small shop wears you out fast. And trying to place sawhorses so you can cut a panel without assistance adds another dimension to your irritation.

TIP: If you have an outdoor deck and it's a nice day, don't even mess with those sheets or sawhorses inside your shop. Lay the material flat on the deck, placing the cutting line over a space between decking planks. Adjust your portable circular saw to cut a little deeper than the material thickness. Now, you can cut the sheet safely and easily. As a bonus, you'll have less sawdust to sweep up in your shop, too.

—Janet A. Collins, East Bridgewater, Mass.



Continued on page 16

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TIPS FROM YOUR SHOP (AND OURS)

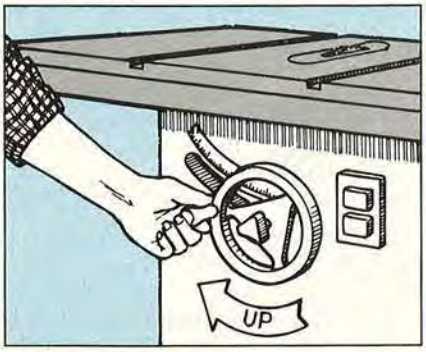
Continued from page 14

Crank it up, not down, when setting your saw

After cutting a series of dadoes with your tablesaw, you find some of them too shallow.

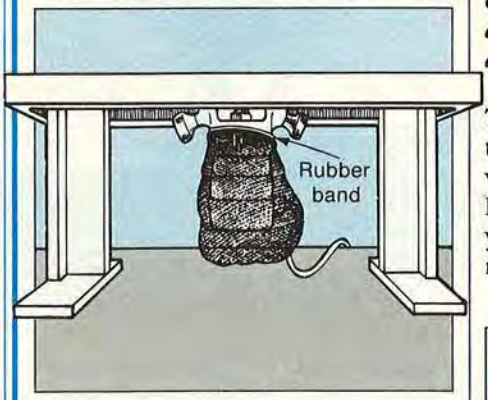
TIP: Your tablesaw arbor moved down as you sawed, due to vibration and pressure on the blade. Guard against blade creep by following this procedure when you adjust blade depth: Lower the blade below your intended setting, and then raise it to the desired height. Don't lower the blade to the cutting height. If your saw has a locking knob on the height-adjustment crank, be sure it's tight before you start to saw.

—from the **WOOD** *magazine shop*



Paint filter keeps router innards clean

Your table-mounted router sucks in a lot of sawdust under the table. You'd like to help it breathe a little cleaner air.



TIP: Affix a bag-type painter's strainer to the top of the router motor housing. Cut a hole for the cord, and secure the bag to the router with a wide rubber band. It helps to drop a small piece of scrapwood into the nylon-mesh bag to keep it extended. Shake the dust off the bag occasionally so it won't clog and cut off air flow.

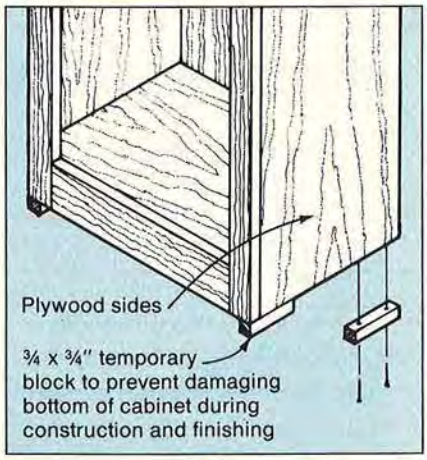
*—**Bruce Buckingham, Mt. Pleasant, Iowa***

Temporary feet lift project above harm's way

Before a project reaches completion, it can suffer a lot of dents and dings in the shop. Cabinets or bookcases built of plywood often end up with chipped face veneer at the bottom from being shoved around on the shop floor.

TIP: Attach scrapwood blocks to the bottom corners of your project with finishing nails or screws. Leave the temporary feet on until you've finished the project and moved it to its final location.

—from the **WOOD** *magazine shop*



Continued on page 18

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Continued from page 16

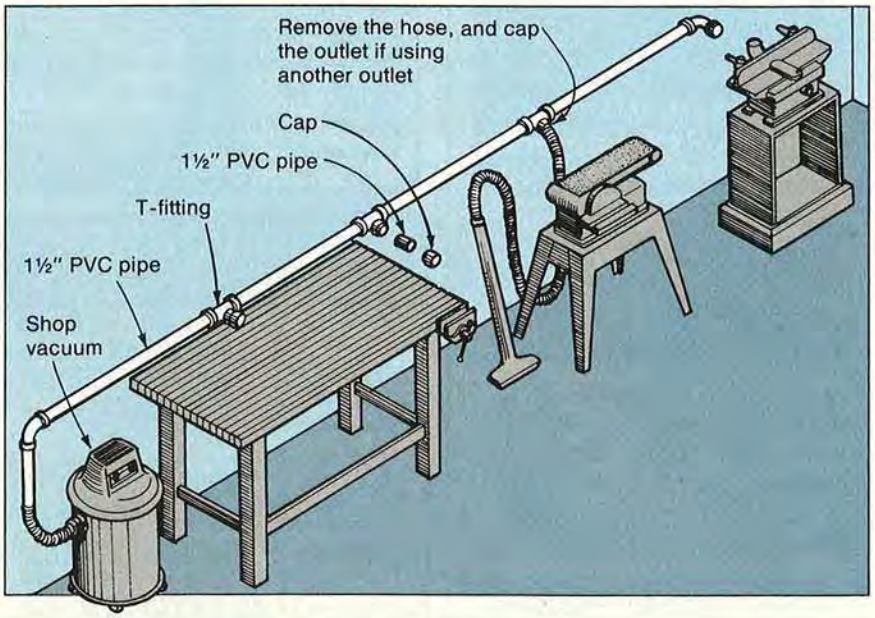
Piping for your shop vacuum makes cleaning up a cinch

A shop vacuum sure expedites cleanup, but moving the machine around in a crowded shop soon becomes bothersome.

TIP: Place the vacuum in an out-of-the-way spot, such as a corner, and then fabricate remote vacuum-hose hookups with PVC plastic pipe as shown *right.* Select a pipe diameter that matches the hose connection on your machine—1½" works for many. Install T-fittings to provide hose-connection ports, covering unused ones with slip-on pipe caps. Use sheet-metal screws rather than glue at the joints so you can open up the system in case you need to clear a clog.

Connect the unit to the system with a flexible coupling, and provide a way to disconnect it in order to remove it for emptying. Be sure you can reach the switch to turn the machine on and off, or else provide a remote power switch. When it's all set up, just slip the hose on the nearest fitting and clean up with no fuss.

—Dean Jenkins, Woodburn, Ind.



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A / Giant 17" x 11" Aluminum Shop Dustpan Makes Short Work Of Clean Up
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24K03.01 Giant Dustpan $13.40

B / Band Saw Blade Tuning Stone Helps Produce Tighter, Smoother Curves
This 3" x ½" x ¼" Silicon Carbide stone is strongly recommended in the best-seller *Band Saw Handbook.* Comes with complete instructions on how to gently round the backs of your blades. The difference in performance is remarkable.
38M01.01 Blade Tuning Stone $8.95

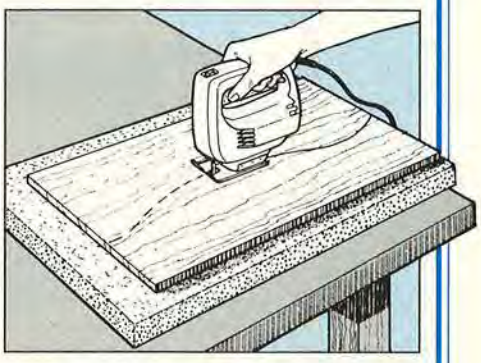
C / Versatile & Strong Shop Cloths Repay Their Extra Cost Quickly
Soft as cotton rags but much thicker, and a lot stronger than paper toweling. Very absorbent, lint free and can be rinsed and reused many times. Great for picking up glue squeeze-out and staining as well as machinery clean-up. Each is 10¼" x 16⅜".
23K02.01 100 Shop Cloths $12.95

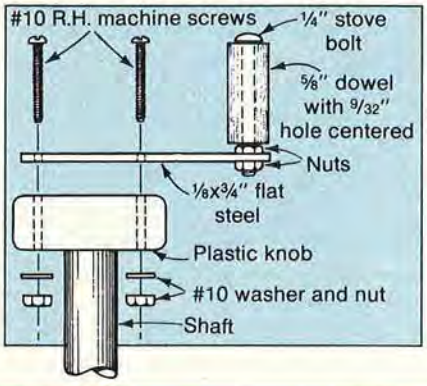
Insulation keeps you cool when cutting with a sabersaw

You're getting steamed trying to make an intricate cut with your portable sabersaw. There just doesn't seem to be any way to support the workpiece firmly.

TIP: A piece of 2"-thick Styrofoam rigid insulation board will cool you down. Lay it on the floor or workbench, with your workpiece on top. Now, saw away! Your workpiece won't slip around, and it will be supported on both sides of the cutting line. A standard-length sabersaw blade won't cut all the way through the 2" foam board so you can cut even thin materials. The insulation board will last through a surprising amount of cutting before you need to replace it.

—Pierre Duval, Quebec, Canada





Adjust plunge router more easily with crank

You have trouble turning the slippery plastic depth-adjustment knob on your plunge router. The situation gets even worse when you mount the router upside down on the underside of your router table.

TIP: Add a crank to your router knob. Fabricate the crank from a suitable length of ⅛x¾" flat steel (a mending plate from the hardware store would work), a ¼x2½" stove bolt with two nuts, and a 2" length of ⅝"-diameter dowel. Drill a ¼" hole centered side to side near one end of the steel, then assemble the crank as shown at left. Attach it to the router knob with nuts and bolts or screws into threaded holes.

—Ray Macke, Marissa, Ill.

Continued on page 20

D / "Hot Stuff" Is Great Stuff For That Quick Fix In Woodworking

Instant glues don't bond wood well or don't have any gap filling strength. Super-T has been specially prepared for gap filling and Special-T for ultra-gap-filling (both 2 oz.). The 3 oz. Accelerator is used to prepare oily and pitchy surfaces and to speed up curing. Use the 2 oz. Solvent for clean-up and to separate pieces joined in error.

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F / Stainless Steel 6X Magnifying Tweezers Save Your Fingers

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03K01.01 Magnifying Tweezers $4.95

G / Garrett Wade Special Furniture Wax Provides Real Protection From UV Damage

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H / Set Of 7 Steel Twist Gimlets Are A Great Value

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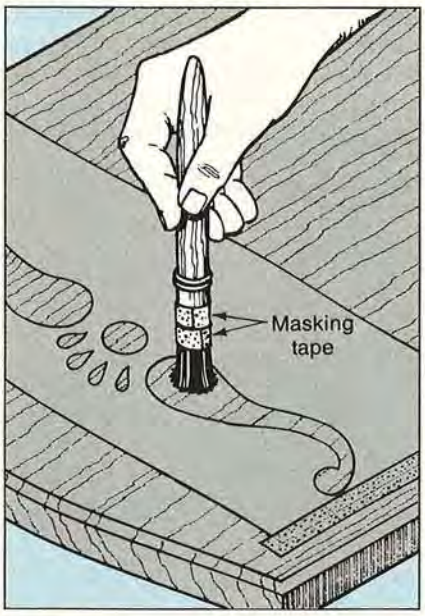
TIPS FROM YOUR SHOP (AND OURS)

Continued from page 19

Tape bristles together for a substitute stencil brush

When you have a small amount of stenciling to do, it's tempting to avoid the expense of buying a stencil brush by daubing the paint on with a standard brush. Trouble is, an ordinary brush isn't stiff enough for stenciling. Then, too, you could end up ruining a good brush that way.



TIP: Before you try to stencil with your standard paintbrush, wrap masking tape around the bristles. The tightly bundled bristles will be stiff enough for stenciling. The tape will also keep the bristles from splaying out and breaking off. After the job, remove the tape. Your brush will be unharmed.

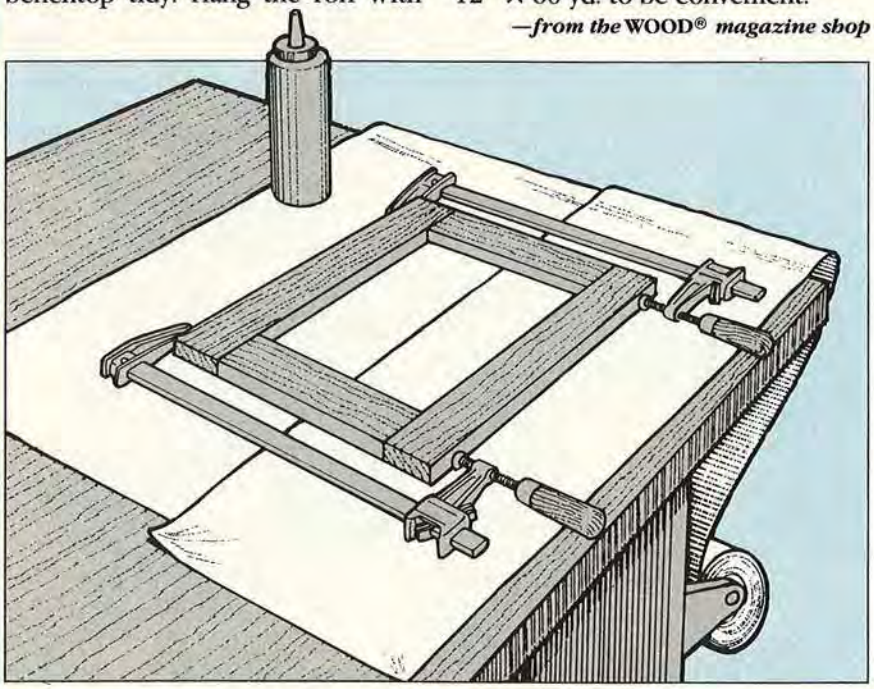
—Barbara Maxwell, Cuyahoga Falls, Ohio

Benchtop stays clean if you paper it over

You really do try to keep your benchtop clean. But gluing, painting, staining, varnishing, and other tasks invariably end up leaving puddles or stains behind, marring that spotless surface.

TIP: A roll of masking paper from the paint store will keep that benchtop tidy. Hang the roll with a simple holder at one end of your bench. Tear strips off and lay them on the bench before you start a messy job. Paint and glue and other goo won't soak through, so when you're done, cleanup is as easy as throwing out the paper. Masking paper comes in several sizes—we found 12″ × 60 yd. to be convenient.

—from the WOOD® magazine shop

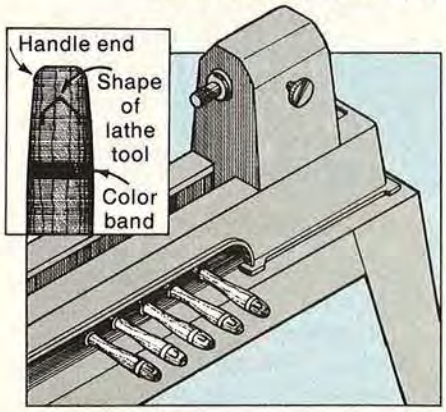


Marked handles aid in turning-tool selection

It's convenient to lay turning tools under the lathe bed while working. If the handles all look the same, though, it's difficult to pick up the right tool when you can't see the cutting tips.

TIP: Color-code each handle with a paint stripe. Mark gouges, for instance, with red, and skews with blue. Mark the size on each one (or draw a profile of the tip) with a black marker. Now, when you reach for a tool, you'll be sure to get the right one.

—William White, Williston, Vt.



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- With a little ingenuity, you can adapt our mitersaw-cabinet fence and stop block to fit your radial-arm saw. See how we used the system on *page 59*.
- Don't have a mitersaw? Go ahead anyway and build the mobile bin on *page 57* to roll around your shop to catch cutoffs from your tablesaw, bandsaw, and other equipment.
- Make scraps into toy wheels using our method described on *page 71*.

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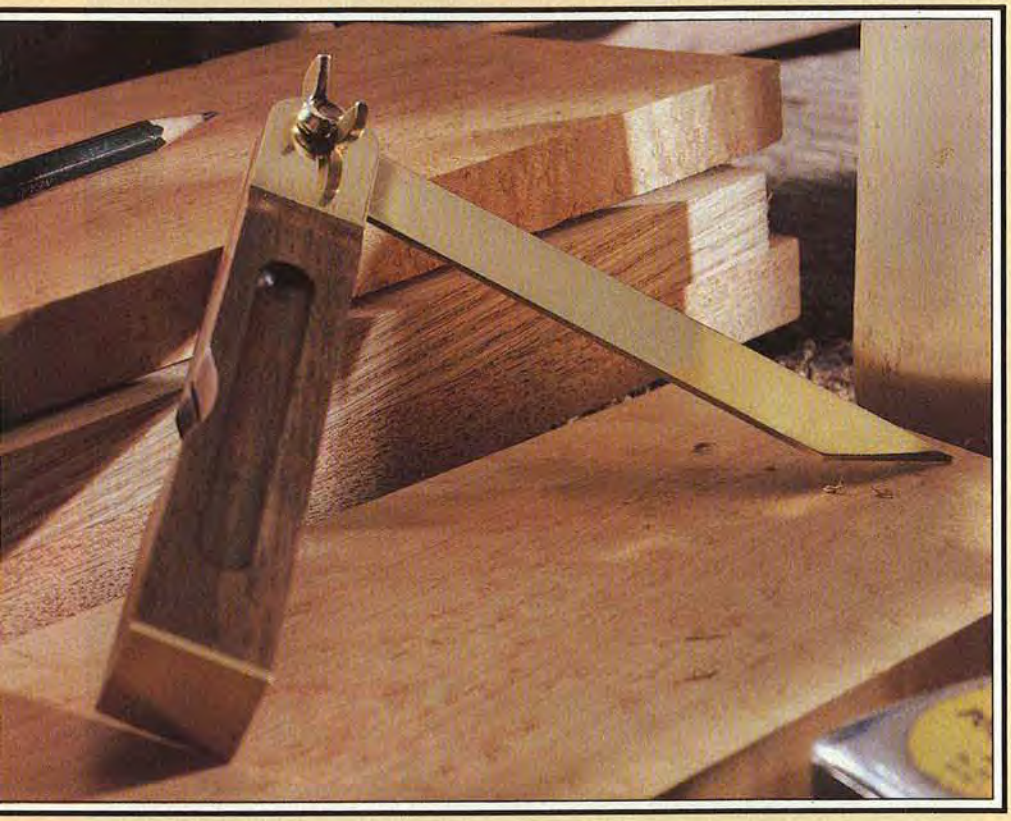


For more than 30 years now, going back to the time when I cut my first board, I've loved the heft, feel, accuracy, and rich look of fine hand tools. If you, too, share the same passion, then let me talk you into making my brass and walnut angle bevel. Whether you're a novice or an advanced woodworker, you'll find that this tool serves its purposes well and makes an attractive addition to your tool assortment.

Jim Boelling
Project Builder

Print this article

Note: *You'll need 5/16" walnut for this project. You can either resaw or plane thicker stock to size.*

Collector's-Edition Tool Plans

We've presented plans for the following homemade tools in previous issues of *WOOD*® magazine: 1) marking gauge, 2) depth gauge, 3) finish scraper, 4) try square, 5) sanding block, 6) strip sander, 7) handscrew clamps, and 8) center finder. To order the instructions, send $2 per plan and a self-addressed #10 business envelope with one first-class stamp *per* plan or $11.95 ppd. for all eight plans to Collector's-Edition Tools, *WOOD* magazine, P.O. Box 11454, Des Moines, IA 50336-1454.

Machine the handle blank

1 Cut a piece of walnut to 5/16×1×18" (we planed 3/4" stock to 5/16" thick).

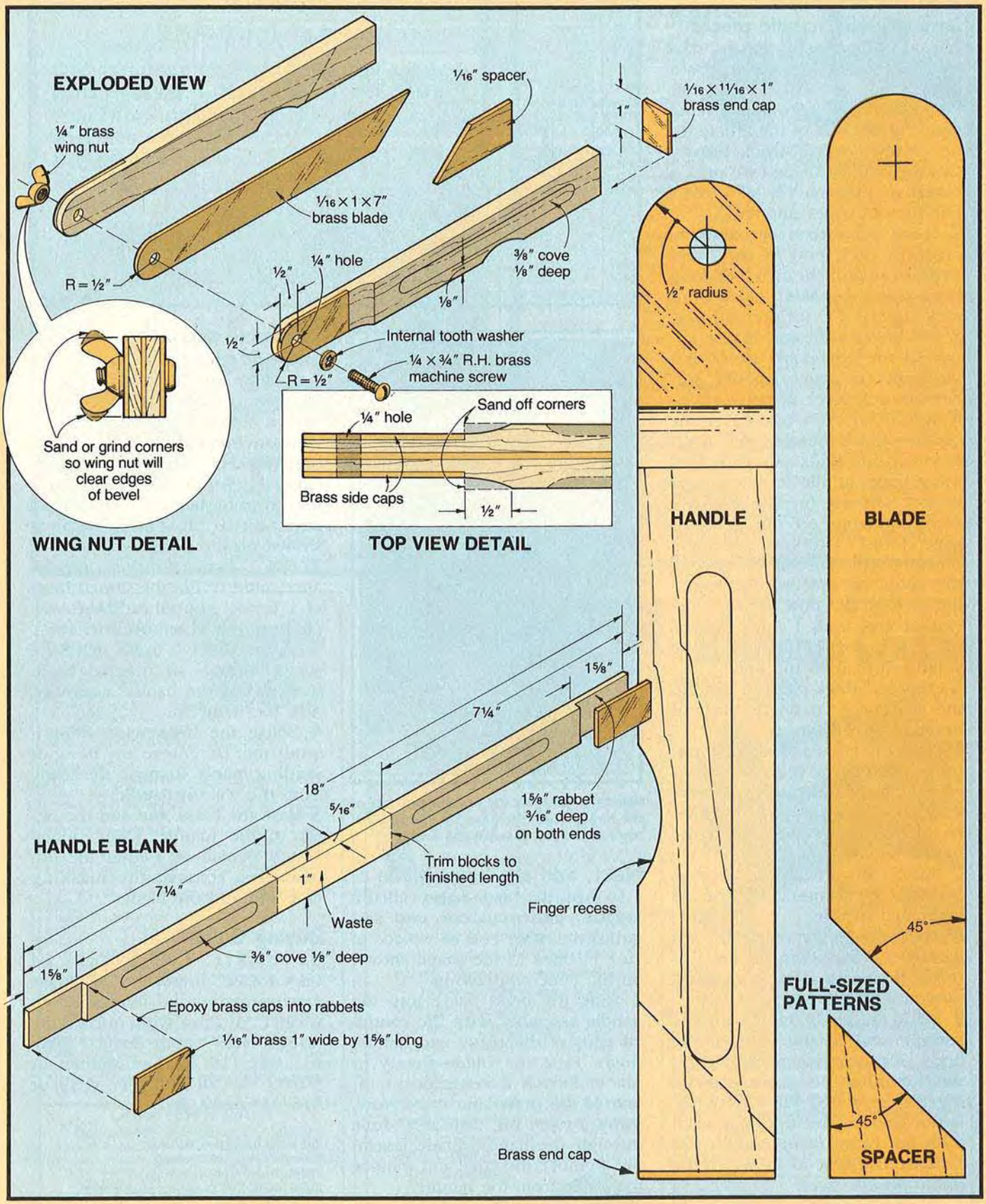
2 Cut a 1 5/8" rabbet 3/16" deep across both ends of the stock where shown on the Handle Blank drawing.

3 Fit your table-mounted router with a 3/8" core box bit and raise it 1/8" above the surface of the table. Clamp a fence to your router table, and clamp a start- and stopblock to the fence where shown on the drawing on *page 24*.

4 With the rabbeted ends facing down, position one end of the handle blank against the startblock, and lower the blank onto the spinning cove bit. Holding the blank firmly against the fence, push the stock until the opposite end of the blank reaches the stopblock. Keeping the same surface down, turn the blank end for end and repeat the process to form the second cove on the other end where shown on the Handle Blank drawing.

5 Crosscut two 7 1/4"-long pieces from the 18" blank where shown on the Handle Blank drawing.

Continued


EXPLODED VIEW
¼" brass wing nut
1/16" spacer
1/16 × 1 × 7" brass blade
R = ½"
¼" hole
½"
⅛"
⅜" cove ⅛" deep
Internal tooth washer
¼ × ¾" R.H. brass machine screw
1/16 × 1 1/16 × 1" brass end cap
1"
½" radius
Sand or grind corners so wing nut will clear edges of bevel
WING NUT DETAIL
Sand off corners
Brass side caps
TOP VIEW DETAIL
HANDLE
BLADE
HANDLE BLANK
18"
7¼"
5/16"
1"
Waste
⅜" cove ⅛" deep
1⅝"
Epoxy brass caps into rabbets
1/16" brass 1" wide by 1⅝" long
Trim blocks to finished length
⅜" rabbet 3/16" deep on both ends
Finger recess
Brass end cap
45°
FULL-SIZED PATTERNS
SPACER

ANGLE BEVEL

Add the brass and laminate the handle pieces

1 To form the brass side caps, start by scribing a ½" radius on both ends of one of the 12" lengths of 1/16"-thick brass. (See the Buying Guide at the end of the article for our source of 1/16"-thick brass.) Cut the radii to shape (we used a bandsaw fitted with a ¼" blade). File the cut edges smooth.

2 Using a hacksaw or bandsaw, crosscut each end of the brass strips to obtain the two 1⅝"-long brass side caps. Next, cut a third piece to 1 1/16 × 1" for the end cap.

3 For better adhesion to the epoxy in the next step, use 60-grit sandpaper to rough up one surface of each piece of brass.

4 Spread an even coat of epoxy on the sanded surfaces, and *lightly* clamp the brass side caps into the rabbets in the handle pieces where shown on the Handle Blank drawing on the previous page. (Note: Excessive clamping pressure will cause all or most of the epoxy to squeeze out, resulting in a weak bond between the walnut and brass.) After the epoxy has cured, cut and sand the walnut flush with the brass.

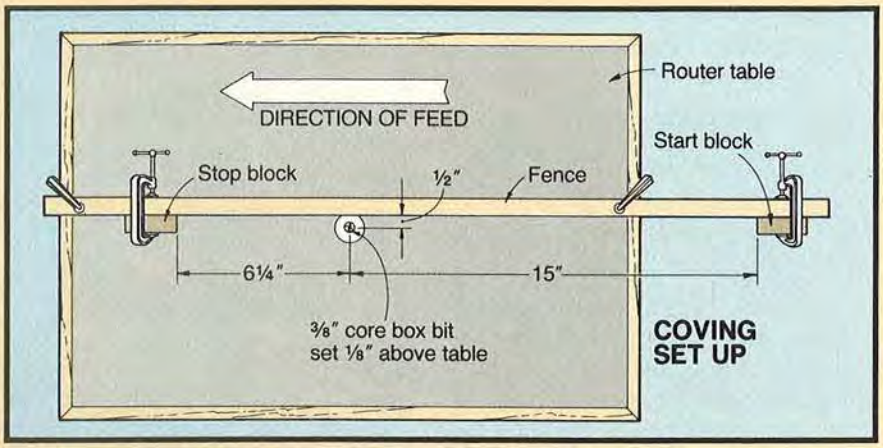
5 Cut a 1/16"-thick piece of brass to the shape shown on the Pattern drawing for the spacer.

6 With the ends and edges flush, glue and clamp the spacer between the handle pieces, see the Exploded View drawing for reference. Later, trim the end of the handle square.

7 Epoxy the remaining piece of brass to the trimmed end of the laminated handle.

8 Mark the finger recess on the handle where shown on the Patterns drawing. Using a drum sander, sand the recess to shape.

9 Mark the slight radius on the walnut next to the ends of the brass side caps where shown on the Top View detail accompanying the Exploded View drawing. Drum-sand to the line and even with the brass, *being careful not to sand the brass,* as shown in the photo *middle right.*



Mark the radii on the walnut portion of the handle, and then sand to the line being careful not to sand the brass.

Next, add the brass blade

1 To form the blade (also called a tongue), miter-cut one end and radius the other end of a piece of 1/16 × 1" brass to the shape shown on the Patterns drawing.

2 Slide the brass blade into the handle assembly with the rounded ends of the blade and handle flush. Tape the blade firmly in place. Punch a centerpoint on one of the brass side caps. Now, using a twist bit, drill a ¼" hole through the handle/blade assembly. Remove the tape, and remove the blade from the handle.

Assemble the parts, and add the finish

1 Sand or file the wings of a ¼" brass wing nut to the shape shown on the Wing Nut detail accompanying the Exploded View drawing. For accurate measuring later, the wings on the nut must not protrude beyond the edges of the handle assembly where shown on the detail.

2 For a better finished appearance, sand or file the slotted head of a ¼ × ¾" roundhead brass machine screw to remove the slot.

3 Insert the ¼" brass machine screw though an internal tooth washer and the handle assembly. Add the wing nut.

4 Polish the brass with 400-grit sandpaper to remove any filing or sanding marks. Remove the blade from the walnut handle.

5 Mask the brass, and add the finish to the handle. (We applied Watco Danish oil.) After the finish dries, remove the masking tape and add the blade.

Buying Guide

Bevel kit. Two pieces of 1/16 × 1 × 12" brass, ¼ × ¾" brass machine screw, ¼" internal tooth washer, ¼" brass wing nut, kit no. AB895, $8.95 ppd. Puckett Electric, 841 11th St., Des Moines, IA 50309 or call 800/544-4189 or 515/244-4189.

Produced by Marlen Kemmet
Project Design: Jim Boelling
Photographs: John Hetherington
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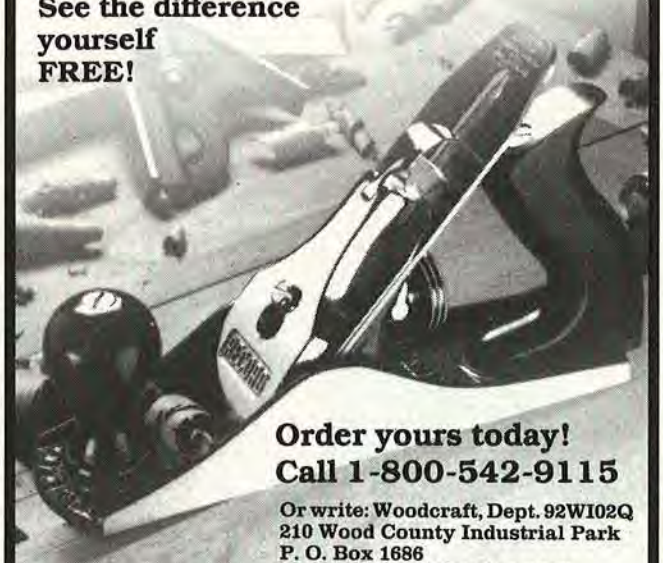

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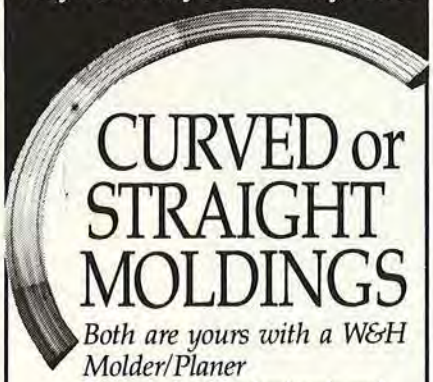

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PRODUCTS THAT PERFORM

Sensing metal in wood

While preparing to mount a vise on a laminated maple benchtop recently, I needed to locate—and avoid—the ½" all-thread rod I knew lurked unseen inside. An ordinary stud finder, which measures density, wasn't up to this job, but I found a tool that was.

The Zircon Voltage-Metal Sensor's red LED light and shrill tone alerted me to the rod immediately, even though it was under 1⅛" of solid maple. I received the same results scanning for small screws under 1" of cherry.

There is a wide range of uses for this tool, including finding live electrical wires, metal pipes, and studs in the wall. For the home woodworker, it may prove most useful for checking recycled or otherwise unusual boards for nails, brads, or other bits of wire before running the stock through the tablesaw, jointer, or planer.

It's also a good safeguard for checking turning blanks culled from your firewood pile. It's not only a good buy in terms of saving your tools, but also with regard to safety.

—Tested by Jim Boelling

Zircon Voltage-Metal Sensor, suggested retail $21, available at ACE Hardware stores.

When the light's on, you're plugged in

You set a sheet of plywood on sawhorses and lay out your project's cutting lines. Then you plug your portable circular saw into the extension cord, slip on safety glasses, and pull the saw's trigger. Nothing happens, because your extension cord's not plugged in.

If this occasionally happens to you, you'll appreciate the LED Cord from Woods Wire Products. A warm orange glow from the LED indicator lamp in the clear rubberized receptacle end of the cord shows you have power. When changing a bit or blade, this light can warn you that the power tool you're working on is plugged in and live. Incidentally, Woods says the LED lamp should last about 30,000 hours.

Even without the lamp, there's a lot to like about this cord. I tested the #14×50′ version for several weeks in my basement workshop. Coiling some cords is like wrestling a giant boa constrictor. This one throws out flat and straight and rolls up without kinking or binding. The receptacle end also grips plugs tightly.

One final advantage I discovered applies to folks living in colder climates where you have to plug your car in to keep the engine from freezing on winter nights. With the extension cord running to the car, you only need to look out the window and check the glow to know there's juice to the engine warmer.

—Tested by Bob McFarlin

LED Cords, by Woods Wire Products, are available in homecenters and cooperatives. The suggested retail price for 50′ cords: #14, $18.56; #12, $27.75. For 100′ cords: #14, $32.75; #12, $47.58. For the location of a retailer near you, call 800/447-4364.

Continued on page 28

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PRODUCTS THAT PERFORM

Continued from page 27

Gun handle takes the cramp out of using spray cans

With improved paints and wider spray patterns, today's canned spray paints go beyond just small jobs or touch-up work. They now take on bigger roles in the finishing of large furniture pieces and metal work. With these assignments, not only do you have to maintain the proper distance, speed, and overlap while spraying, but eventually, your finger cramps from pushing the small button on top of the can.

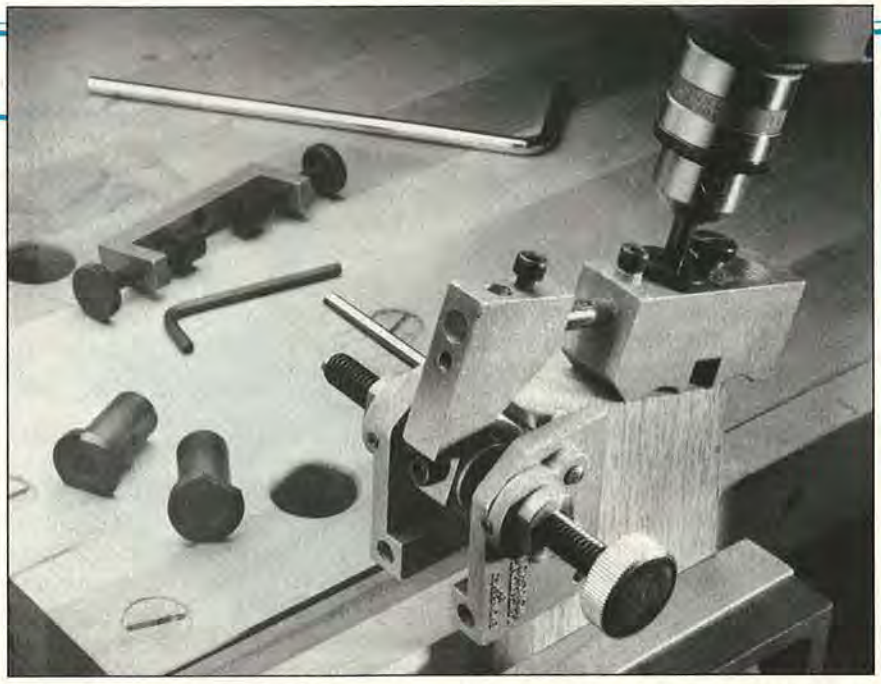
To the rescue comes the Tru-Test Can-Gun, a comfortable plastic handle that locks securely into the spray-can top, providing you with a trigger mechanism that holds down the spray nozzle. You regulate the spray by pulling the trigger fully or partially.

I use the gun handles in my auto-body shop to apply messy undercoatings and strippers. They let me spray on material evenly, and, better yet, I found I can reuse the durable gun handles through hundreds of cans.

For a meager two bucks, moderate spray-can users can benefit from this product and feel good about their investment. For those of you who do a lot of spraying, or who regularly apply messy or caustic materials, this may be one of the smartest buys you'll make this year.

—Tested by Bob McFarlin

Tru-Test Can-Gun, by SafeWorld Int'l, Inc., about $2 at True Value Hardware stores.



3-in-1 Shop Helper: lots of tool for the money

Leichtung says the Helper performs the functions of a centerline finder, a stopblock, and a doweling jig—all for the price of one tool. The opposing thread pattern on the lead screw—the heart of this tool—automatically centers it in any of the three modes.

During my tests, the tool fastened securely as a stopblock—and as a hold-down—on fences ranging from ¼" to 2½" thick. A movable, locking rod made fine adjustment here a snap.

By replacing the rod with a pencil, I could draw a centerline bisecting stock as thick as 2½". That makes the Helper a handy tool for lining up mortise drill holes or spline slots.

Set up as a doweling jig, the Shop Helper let me drill centered holes on board edges, and on ends cut at any angle. It even adjusts for boring at a compound angle, if that's what you need. Quick-change hardened steel bushings for ¼", 5/16", and ⅜" drill bits come with the Helper.

—Tested by Bob McFarlin

3-in-1 Shop Helper, catalog no. 96347, $34.98 ppd., from Leichtung Workshops, 800/321-6840. For the Shop Helper with an extra set of bushings, order catalog no. 96347 and catalog no. 99572, for $38.97 ppd.

Continued on page 30

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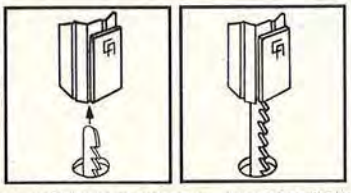

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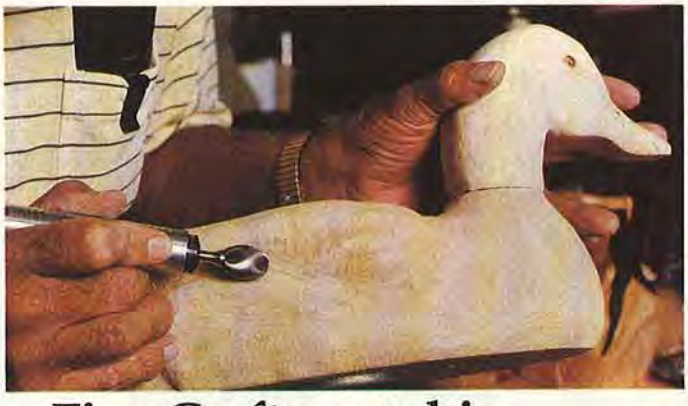

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Continued from page 29

A new angle on miter-cutting molding

Miter-cutting moldings on a tablesaw represents a special challenge. Either you carefully set and reset your tablesaw gauge to get perfect cuts, or rely on more costly miter accessories. But with every resetting, you run the risk of altering your angles ever so slightly.

Now, Leichtung Workshops says its Perfect Miter Square lets *anyone* cut perfect 90° angles on moldings and frames with one easy setup. It resembles two standard gauges joined at the corner to form an exact, rigid right angle.

In my tests, I found that the Miter Square fit snugly in my Craftsman tablesaw miter gauge channel. When using it, I set the accessory just once. Then, I placed a molding piece against one gauge face for the first cut; I cut the mating molding using the other gauge face. To check my work, I fit the two pieces in the corner of a square. The joint was always flawless.

In all, the tool proves quite forgiving. Your second cut will always compensate for any deviation from a 45° setting to give you that 90° corner.

I needed a wooden auxiliary fence on my gauge to keep the moldings from slipping as I cut. The Miter Square comes with plans for a wooden, jig that should help secure your workpiece against the gauge and cut opposing frame parts to the same length.

For the person who makes a lot of picture frames or square mitered corners, this tool could be a real asset. But for making hexagonal or octagonal frames, the accessory loses its advantage over the standard gauge. As for longer room moldings and door frames, most folks prefer to cut these with a radial-arm saw or a mitersaw.

—Tested by Bob McFarlin

Leichtung Workshop's Perfect Miter Square No. 26625 (for Sears models), or No. 29363 for De Walt, Rockwell, and Delta saws, $55.98 ppd. Call 800/321-6840.

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- Blades: uses pin & plain end

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This 1-1/2HP model allows for use in 2 or more machines & gives improved service for long runs of hose.
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#DC2 ..... **$299.95** (UPS $30)

610 CFM Dust Collector:
This collector is perfect for hook-ups to almost any single machine.
• 1HP, 110/220V • 1 outlet @ 4" • 2 Bags @ 20 gal • Wt: 75lbs • 610 CFM • **Free:** 8' of hose, 1ea 4" to 3" & 4" to 2" adaptors.. **$15 Value**
#DC1 ..... **$199.95** (UPS $20)

THE MARVELOUS MITER TRIMMER

You can *really* cut corners with this old-timer

Print this article

Few results please a woodworker more than tight-fitting miter joints. That's why, over the decades, toolmakers have designed many devices for cutting them. But nothing else can rescue a sloppy miter more handily than the cast-iron miter trimmers, manufactured since the Civil War. Craftsmen still use them to clean up miters, bevels, and square cuts in stock as wide as 6".

Miter trimmers feature a pair of removable knives in a V configuration, with adjustable gauges that stop at 90° and 45°. You can set the gauges to trim frame pieces for hexagons or other polygons.

Evolved from planes

Miter trimmers evolved from planes used with wooden or iron guides called chute boards, or shooting boards. Early trimmers used a knife or large plane iron on a long handle that pivoted below a worktable.

The trimmer shapes perfect angles by shaving thin slices of wood from ends of already miter-cut stock. Those post-Civil War machines, like the Oliver trimmer *above,* and those that followed, can slice about one degree or 1/16" per pass to correct an angle or length. The resulting true and super-smooth surface leaves no obstruction to a perfect joint.

By the turn of the century, the Pootatuck Machine Works' Lion trimmer was most popular among carpenters and in small shops. Fay & Egan, Fox, and Oliver made similar machines.

Buying an antique trimmer

When searching for a good used trimmer, avoid any with broken or missing parts. And ask if there's an extra set of knives (one to sharpen, one to use). Expect to pay $75 to $150 for an antique trimmer in good condition, more for an Oliver or special ornate model. (New ones cost twice as much.) If you can't get your blade sharpened locally, or want it done by a miter-trimmer specialist, check with Pootatuck Corporation's Suzanne Nothnagle at 802/674-5984. Plan on cleaning, adjusting, and lubricating your trimmer for smooth operation.

Six tips for good trimming

Many craftsmen like the old trimmers better than the new ones, but either way, your miters are sure to improve when you use one in the following manner.

- Keep the knives sharp.
- Don't force the tool.
- When necessary, take several thin cuts to get down to your line.
- Set the gauges using scrap first.
- Check the angle with either a square or a bevel.
- Cut the largest or longest pieces first, and then the shortest, trimming to length and adjusting the gauges slightly as necessary.

Written with Philip J. Whitby

Photograph: Tim Murphy

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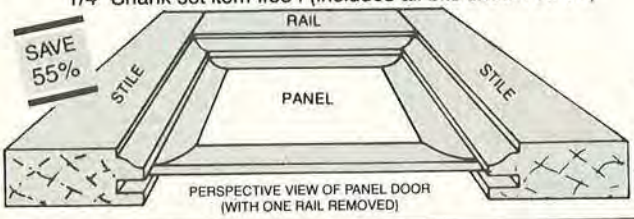

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#903		1/4" Spiral Cutter		1/4"	3/4"	1/2" *	$12.00
#904		3/8" Spiral Cutter		3/8"	1"	1/2" *	$24.00
#905		1/2" Spiral Cutter		1/2"	1 1/2"	1/2"	$29.00
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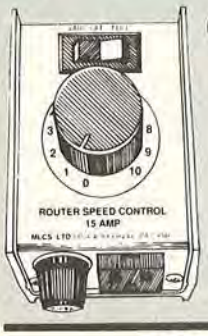

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Rick Harney's depth-defying tricks of perspective make him

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In his light-filled studio overlooking downtown Bloomington, Illinois, Rick hand-carves fool-the-eye figures.

Continued

MASTER ILLUSIONIST

Print this article

Shoeless Joe

Rick Harney sculpts like Norman Rockwell drew. Affectionately, realistically, and with great attention to detail, the woodcarver renders his whimsical three-dimensional portraits from small-town America.

In one corner of Rick's studio, *Shoeless Joe*, leans on his bat, as if he had just stepped out of the movie *Field of Dreams*. His uniform, its folds bathed in early-morning sunlight, links him to the 1919 Chicago White Sox. The lines in his face, though, express some uncertainty.

"Shoeless Joe Jackson was a tragic story," says Rick, who carved the figure in relief from a 1¼"-thick jelutong board. "He couldn't read or write, and he wore no shoes when he tried out for the team. Yet, he batted .375 in the fateful series."

Joe's glory days ended on the front pages of the nation's newspapers. According to Rick, he was tossed out of baseball for taking a $5,000 bribe to throw the World Series against the Red Sox.

Shoeless Joe—or Rick's carving of him—can still be bought for around the same amount. Rick asks $3,000 to $5,000 apiece for his carvings.

Behind each of Rick's carvings lies a story. The woman in rollers, titled *Slumber Party,* represents his wife Betsy's best friend in college. But like most of his work, there's something familiar enough

Slumber Party

When Rick Harney travels around the twin cities of Bloomington and Normal, Illinois, it's mostly by bicycle. Sure, he likes the fitness aspect, but he's also practical.

Rick, 37, rents a third-floor studio downtown, where, he says, "It's darn hard to find a long-term parking spot." Because of that, he hauls his bicycle up two flights of stairs and down a couple of winding hallways to park it. But Rick figures that's just part of an artist's toil, a road he chose to follow.

"I started out in college as a business major, because I had always been good with arithmetic and other calculations," he recalls. "But a few courses in art helped me to change my mind."

As a result, Rick dropped out for awhile and went to work with a church renovation firm in nearby Peoria, where his talent guided him to painting murals and sculpting statues in fiberglass. When he did complete his degree from Illinois State University in 1986, it was in art.

Rick took to wood right away, but it wasn't until 1990 that his pieces received recognition from other woodcarvers. That year, his carving *Rough Draft*, see photo, *left*, took first place in relief at Davenport, Iowa's International Woodcarvers Congress. Then a few months later, he received another first place at a woodcarvers' competition in Branson, Missouri.

Rick, who works part-time in a paint store to pay for wood, art supplies, and loft rent (his wife Betsy works, too), looked forward to the $1,150 prize money he had won. "But on the way back from Branson, my car blew its engine. And that cost $1,900! It's all part of the struggle," he says.

about the person that you wouldn't have to know the story.

Everyone, for instance, has an aunt or neighbor lady who could have posed for *Frances*. And although *J. Clement Stone* is a portrait of the Chicago financier of the '50s, whose book on positive thinking impressed Rick, the face could be that of an insurance salesman or used car dealer. And it was the face that lured him.

"It was a real challenge to do a portrait in that scale, 24" tall and 18" wide," says Rick. "But Stone was just fascinating enough that I could stand to look at him for the two months it took to carve."

Rick's subjects usually come from old photographs of common everyday folks. He believes that's why people relate to them. Opening a photo album and pointing to a brown-tinted print, he says, "You just know that this person is someone's aunt, because she reminds you of yours."

Turning up the volume

Viewed head on from only a few feet away, Rick's work looks fully round. Yet, in the 6 years since his first carving, made from a ¾"-thick board, none has exceeded 1¾" thick. "Come on, it *can't* be that thin!" most people insist.

How does he do it? "I add volume to the wood," the carver says matter-of-factly.

Of course, Rick's talking about visual volume—an optical illusion where something looks lifelike in depth, but really isn't. Look at the nose and the cap visor on *Shoeless Joe*, for instance, or the horse in *Rough Draft* with a view from muzzle to hindquarter. It's a fool-the-eye technique that begins before a gouge ever touches wood.

"First I make a quick sketch of the figure to give me an idea of the rough form or pose," explains Rick. "But, it's in the clay model that volume begins." Although few carvers make clay models, it makes good sense to Rick.

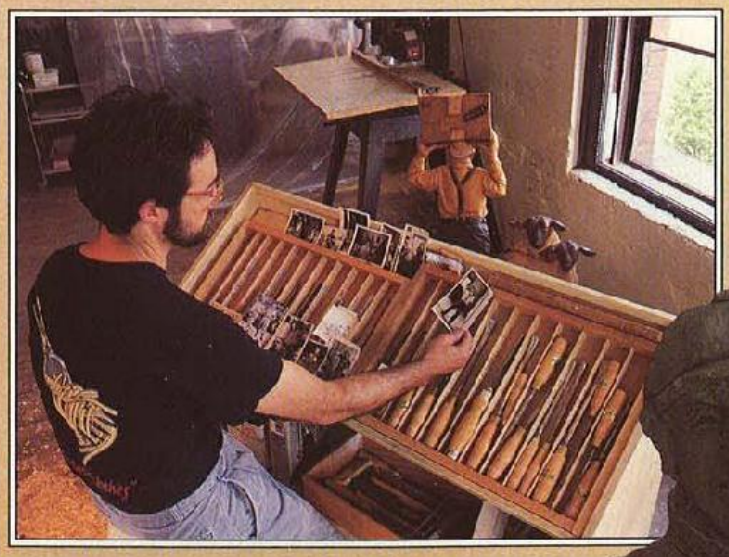
Continued

Frances ▶

▼ *J. Clement Stone*

▼ *Udder Contentment*

MASTER ILLUSIONIST



Left: Rick gets ideas for his carvings from old photographs. The photo he holds was the basis for *Fiber Test* resting on the floor in the background.

Top right: Rick's unorthodox, self-taught carving technique places his left hand against the wood.

Bottom right: Painted shading helps create the illusion of depth in Rick's carvings.

Below: A companion piece for *Shoeless Joe* will be Boston Red Sox catcher Bill Carrigan. Rick works on the original clay model for the figure.

Reality through exaggeration

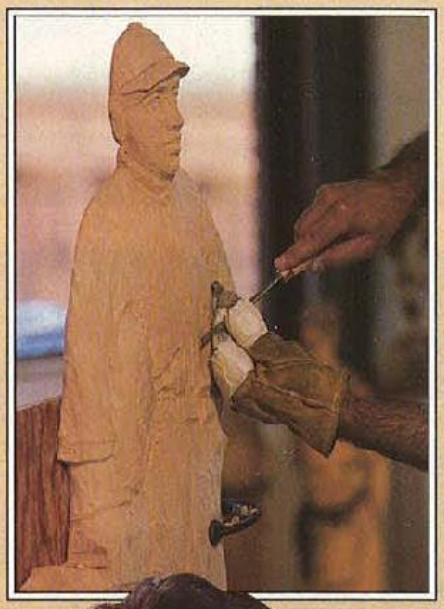
"The deep lines I use are really a drawing technique," the carver explains. "I have to exaggerate the lines that define depths, and that's real critical. In the clay, I can get all the deep lines right, so that in the wood I don't make deep cuts in the wrong places."

Rick will spend about three days perfecting a clay model. The actual carving, though, may take as long as 3 months to complete, because, as Rick describes the technique, "It's a very slow, take-away process." Once though, Rick's pieces took even longer. That was before he won a 12-piece set of Henry Taylor gouges at the Davenport carvers' competition.

"When I started carving, I had only three ordinary carpenter's chisels from the hardware store," Rick remembers, amused. "I didn't know any carvers to give me advice."

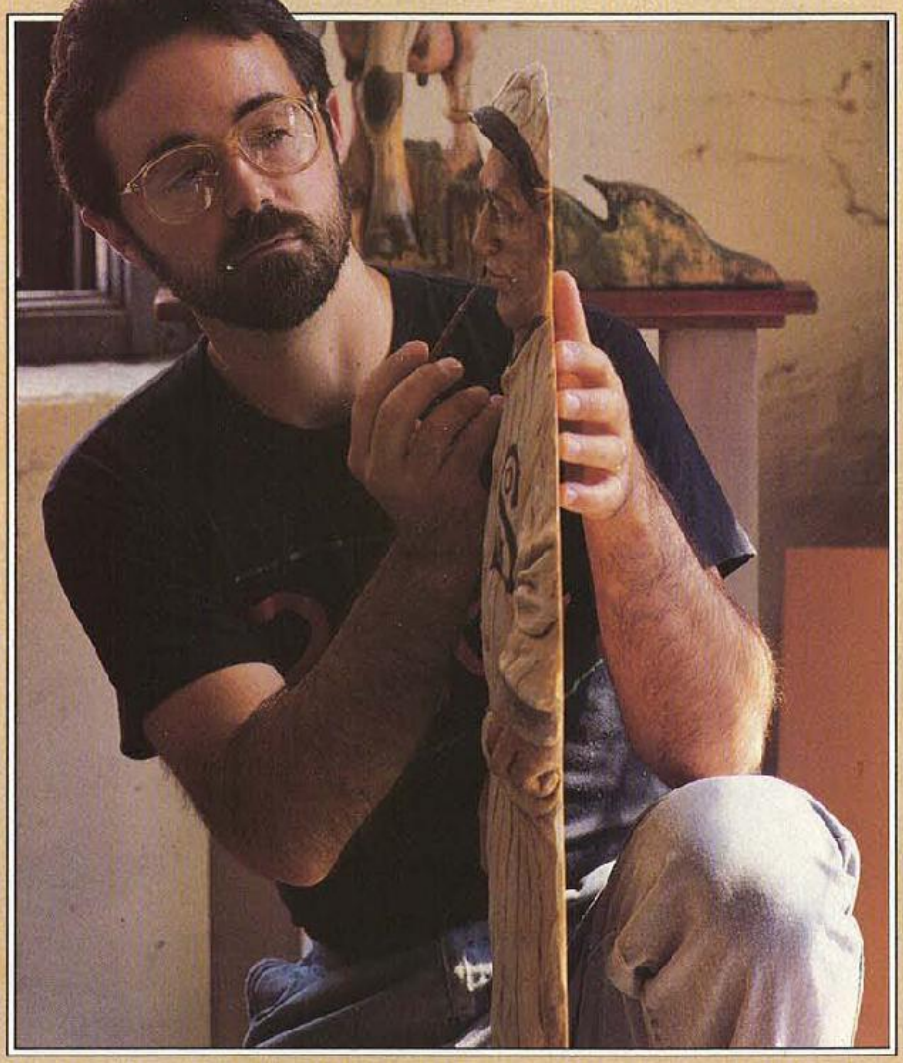
Carving aches and pains

Rick knew little about wood, either. But all that has changed now, and his pieces emerge from pine, basswood, or jelutong that a local hardwood outlet planes and joints for him.



"My first pieces warped because they were made from one board," Rick admits. "Now, I glue up two or three boards to width. And, I'll glue in dowels where an area might need extra support—like on *Shoeless Joe's* bat. I also learned that I'll never carve poplar again." The thought makes him chuckle. "After carving *J. Clement Stone*, I had to take a few months off because I got tennis elbow so bad I couldn't carve a chip."

In addition to his fine set of carving tools, Rick uses a sabersaw, a die grinder, and a radial-arm saw. "I crosscut my wood on the radial-arm," he says, "then, I'll saw my pieces to rough, outline shape with the sabersaw. I use the grinder to remove large areas of wood down to the critical stage."



Rick does, though, need his indispensible leather glove. "I never carve without it," he says, inspecting its battered surface. "You see, the work's real flat, and I'm right on top of it. I get in so tight with the chisels that it pushes my hand against the wood. Besides, I did catch the tip of a finger once."

Adding the glow of color

Rick's first carvings carried little more than a clear varnish, letting the lines and tool marks create the image. Then, he started accenting depth lines with stain. "Some of the carvers I had met around town said 'Oh, you got to stick with a clear finish so people can see the wood.' But I found out that on display, my pieces often almost vanished," he says.

Now, Rick's carvings carry solid coats of paint in some areas. "By highlighting and shading, I add to the depth," he explains. "Paint enhances the illusion."

The painting takes time, too. That's because Rick gradually builds the color up with thin coats. Rick uses a slow-drying blend of artists' oil colors thinned with varnish to wash consistency. "And if I don't like what I've done, I can take it off," he says.

Sometimes nothing beats the look of natural wood, which he used for the bodies of the sheep in *Fiber Test* and the figure's arms and face in *Rough Draft*. "There, I only added some tiny dabs of color," he says. "I keep experimenting, trying to get it right." And when it's right, it's a masterful illusion, like *Shoeless Joe* standing in the morning light.

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SHELVING
A NATURAL FOR

Fluted face-frame stiles and a richly molded top set the style for this full-length bookcase. On the practical side, its capacity may amaze you. As shown here, six shelves (five of which adjust on standards and brackets) measure 13×38⅜" each, leaving more than enough room for three sets of encyclopedias. Once you build the bookcase, you'll find it the perfect accent for a home study, family room, or any other haunt where you enjoy reading.

Start with the basic cabinet

1 From ¾" plywood (we used walnut), cut the sides (A) and top and bottom (B) to the sizes listed in the Bill of Materials. (To support the thin veneer fibers and minimize splintering when crosscutting the plywood, we lightly marked the cutlines with a pencil. Next, we placed masking tape next to the cutlines, made the cuts, and then removed the remaining tape.)

2 Referring to the Basic Cabinet drawing, mark the rabbet and dado locations across the top inside edge and 5¼" from the bottom edge of the sides (A). Cut or rout the rabbets and dadoes. (We used a router fitted with a straight bit and an edge guide.)

3 Cut a ¼" rabbet ½" deep along the back inside edge of each side piece (A). See the Back Panel detail for reference. Now, cut a pair of ⅝" grooves 3/16" deep on the inside face of each side piece for the shelf standards. (We test-cut the groove in a piece of scrap stock

first to verify that our standard would fit snugly into it and remain flush with the surface.)

4 Cut a ⅜" rabbet ⅜" deep along the front outside edge of each side piece to form a tongue.

5 Dry-clamp the pieces, and check for square. Measure the width of the rabbeted opening in the cabinet back, and cut the back panel (C) to size from ¼" walnut plywood. The plywood back is flush with the top face of the top (B) and flush with the bottom face of bottom (B).

6 Glue and clamp the basic cabinet; check for square. Glue and nail the back panel in place. Installing the back panel now helps square up the assembly.

7 Temporarily position the shelf standards in the grooves. Measure the grooved opening above each. Then, to match the veneered cabinet interior, cut and resaw four filler blocks (D) from ¾" walnut plywood to fit. Glue the filler blocks in place, and then remove the standards.

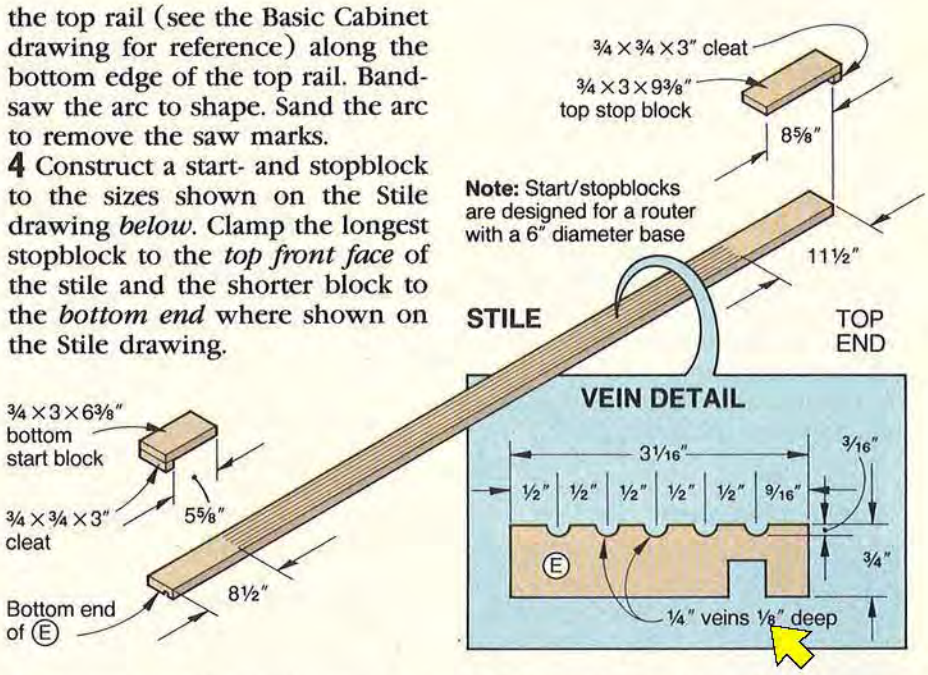
Let's make the walnut face frame

1 Cut the stiles (E), top rail (F), and bottom rail (G) to the sizes listed in the Bill of Materials.

2 Cut or rout a ⅜" groove ⅜" deep along the back outside edge of both stiles (E) where shown on the Groove detail accompanying the Basic Cabinet drawing. Note that the stiles (E) extend 1/16" past the outside face of the sides (A). This protrusion will be routed flush later.

3 Using double-faced tape, adhere the top rail (F) flush with one end of a sheet of plywood. Using trammel points, swing a 46" arc intersecting the lower corners of the top rail (see the Basic Cabinet drawing for reference) along the bottom edge of the top rail. Bandsaw the arc to shape. Sand the arc to remove the saw marks.

4 Construct a start- and stopblock to the sizes shown on the Stile drawing *below*. Clamp the longest stopblock to the *top front face* of the stile and the shorter block to the *bottom end* where shown on the Stile drawing.



5 Fit your router with an edge guide and a ¼" core box bit.

6 Now, before routing the veins, position the router against the blocks to check that the router bit will start 8½" from the bottom end of the stile and stop 11½" from the top; adjust the length of the stops if necessary. *The location of the stops will depend on the size of your router base.*

7 Set the bit to cut 3/16" deep, and rout five veins in the front face of both stiles where dimensioned on the Vein detail *above right*. To minimize sanding later, make a second pass down each vein as shown in the photo at *right*.

8 Dry-clamp the face frame pieces (E, F, G) to the frame, and mark dowel-hole reference lines across the front face of each where dimensioned on the Basic Cabinet drawing. Remove the clamps, and drill mating ⅜" holes 13/16" deep where marked.

9 Glue and clamp the face frame, checking for square. Later, remove the clamps, and sand the back surface flush for a tight fit against the cabinet front.

Continued

Rout ¼" veins 3/16" deep using a router fitted with an edge guide and stops clamped to the ends of the stile.

Attach the face frame, and rout the molding groove

1 Glue and clamp the face frame to the cabinet. (Before clamping the face frame to the cabinet, we placed masking tape on the walnut plywood next to the joints being glued, so any glue squeeze-out dried on the tape. Later, after the glue dried, we peeled off the tape and excess glue. We've found this process easier then trying to remove the squeeze-out with a damp cloth or trying to scrape it off after it's dried.)

2 Mount a flush-trimming laminate bit into your router. Rout the 1/16" protruding outside edge of the stiles flush with the outside face of the cabinet sides (A). (We found this more effective than trying to plane the edges flush.)

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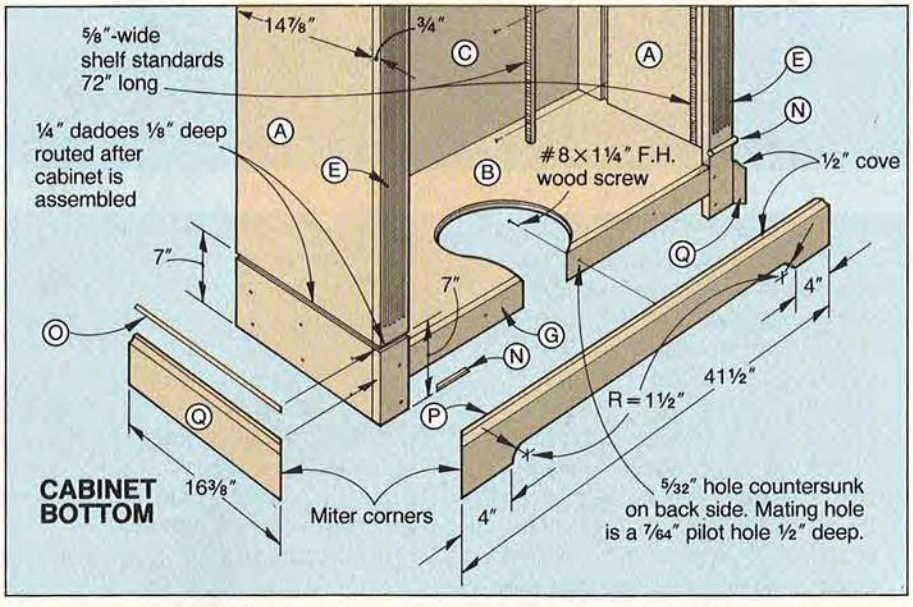
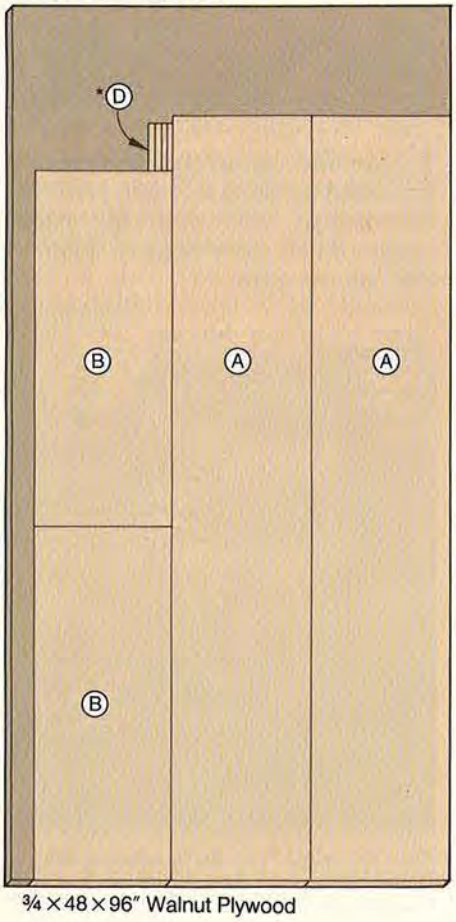
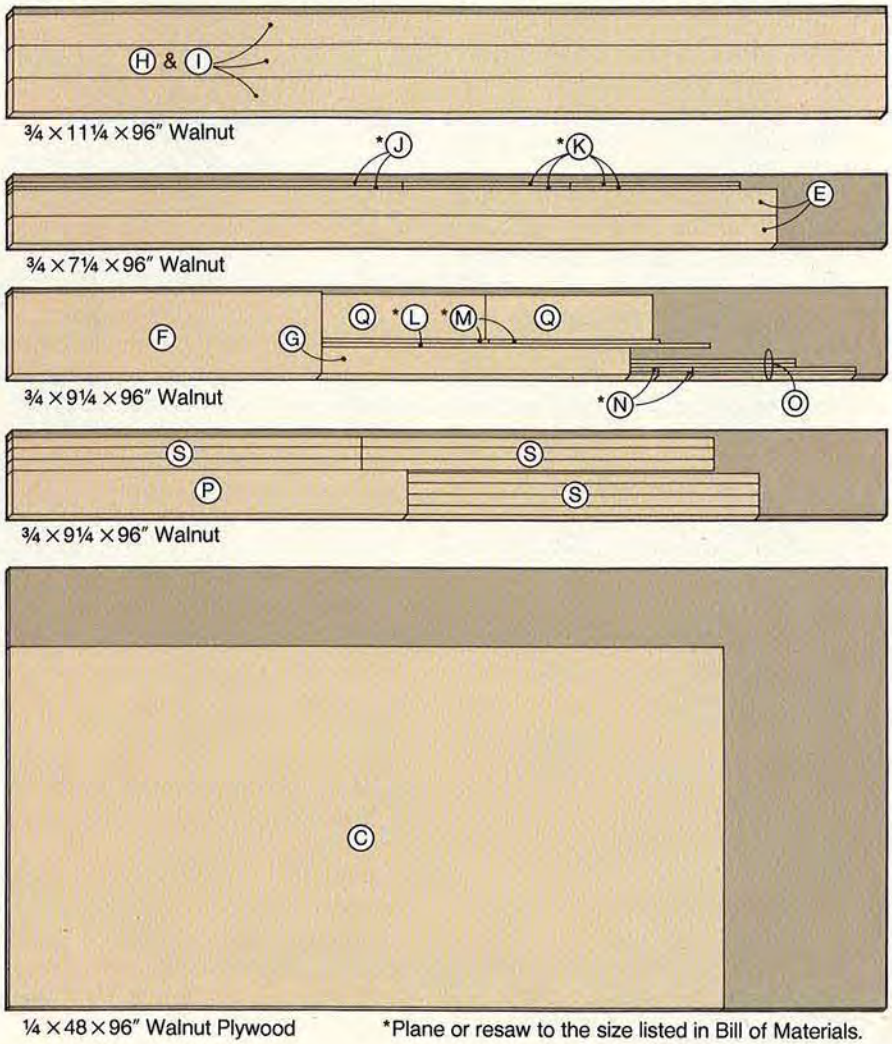
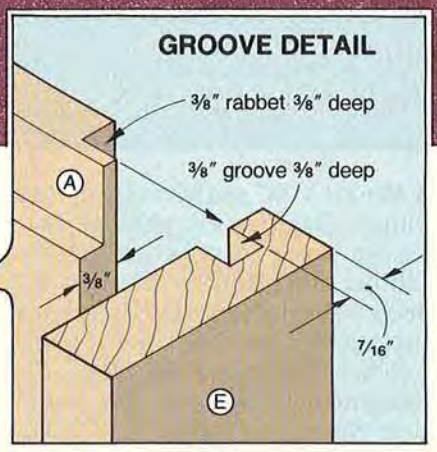


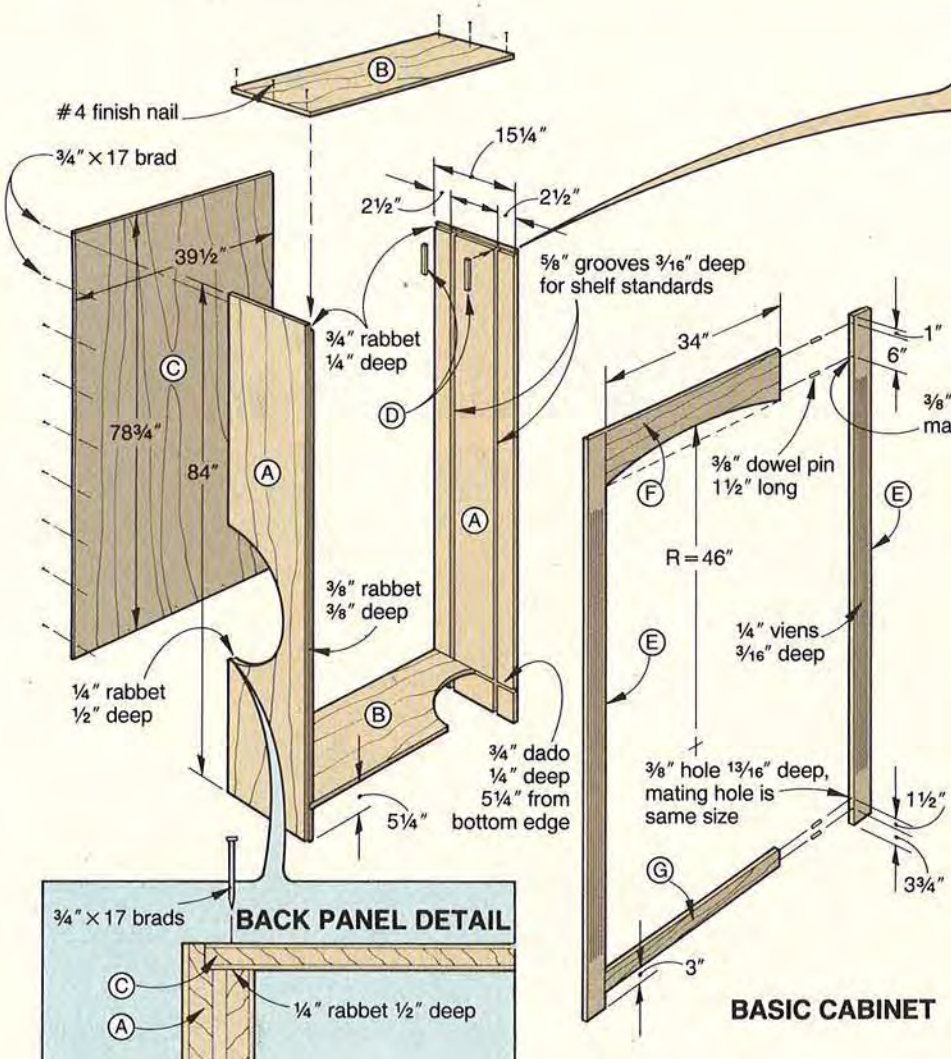
Cutting Diagram

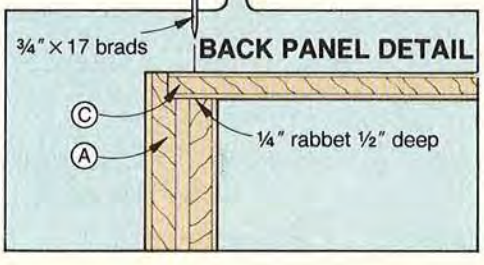


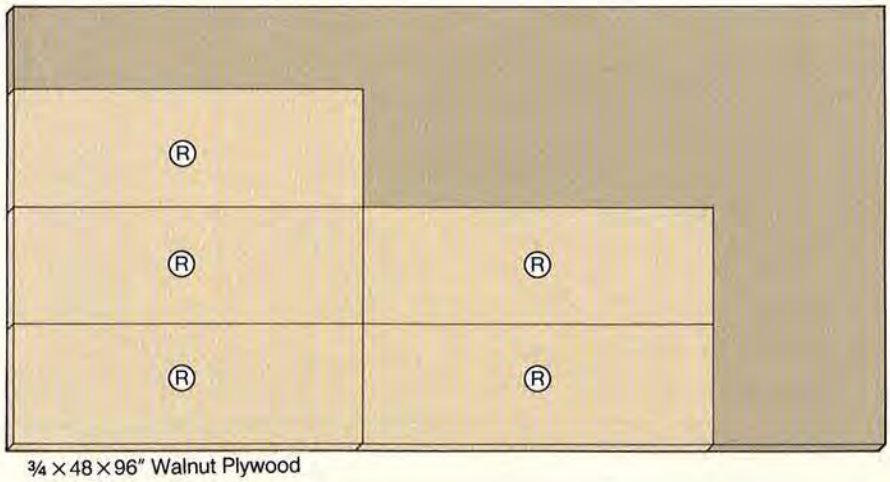


*Plane or resaw to the size listed in Bill of Materials.









¾ × 48 × 96" Walnut Plywood

Bill of Materials

Part	Finished Size T	W	L	Material	Qty.
BASIC CABINET					
A	¾"	15¼"	84"	WP	2
B	¾"	14⅝"	39"	WP	2
C	¼"	39½"	78¾"	WP	1
D	3/16"	⅝"	5⅛"	WP	4
E*	¾"	3 1/16"	84"	W	2
F	¾"	9"	34"	W	1
G	¾"	3"	34"	W	1
MOLDING					
H*	1 13/16"	3"	44¼"	LW	1
I*	1 13/16"	3"	17¾"	LW	2
J*	¼"	½"	41"	W	2
K*	¼"	½"	16⅛"	W	4
L*	¾"	⅜"	40¾"	W	1
M*	¾"	⅜"	16"	W	2
N*	⅜"	¼"	3¼"	W	4
O*	⅜"	¼"	15⅞"	W	4
P*	¾"	5"	41½"	W	1
Q*	¾"	5"	16⅜"	W	2
SHELVES					
R*	¾"	13"	38⅜"	WP	5
S*	¾"	1¼"	38⅜"	W	10

*Initially cut parts marked with an * oversized. Then, trim each to finished size according to the how-to instructions.

Material Key: WP—walnut plywood, W—walnut, LW—laminated walnut

Supplies: ⅜" dowel pins 1½" long, #8 × 1¼" flathead wood screws, #8 × 1½" flathead wood screws, #4 finish nails, ¾" × 17 brads, ⅝ × 72" flush-mounted shelf standards (walnut finish) with mounting brads and supports, finish.

3 Mount a ¼" straight bit in your router. Clamp a straightedge (we used a piece of plywood) to the cabinet side. Rout a ¼" dado ⅛" deep 10" from the top edge of the cabinet top where shown on the Cabinet Top drawing. Move the straightedge and rout the other side. Now, rout the front face. Using the Cabinet Bottom drawing for reference, rout the dado across the bottom of the cabinet.

Next, shape some cove molding for the cabinet top

1 To form the thick top cove molding, cut three pieces of ¾"-thick stock to 3½" wide by 8' long. (This will give you enough stock for parts H and I.)

2 Glue and clamp the three pieces of stock face-to-face with the edges and ends flush.

3 Scrape the excess glue from one edge, and then joint it flat. Now, rip the opposite edge on your tablesaw for a 3" finished width.

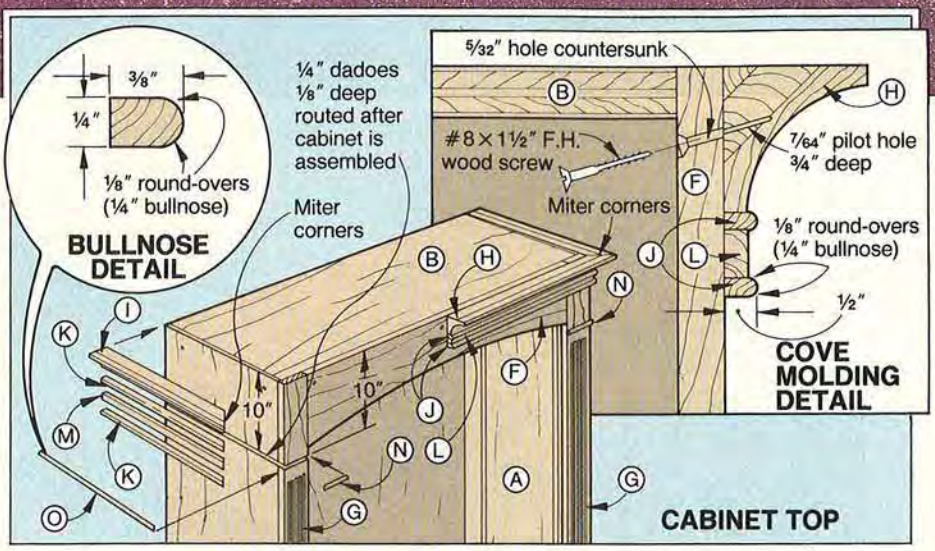
4 Resaw or plane the lamination to 1 13/16" thick.

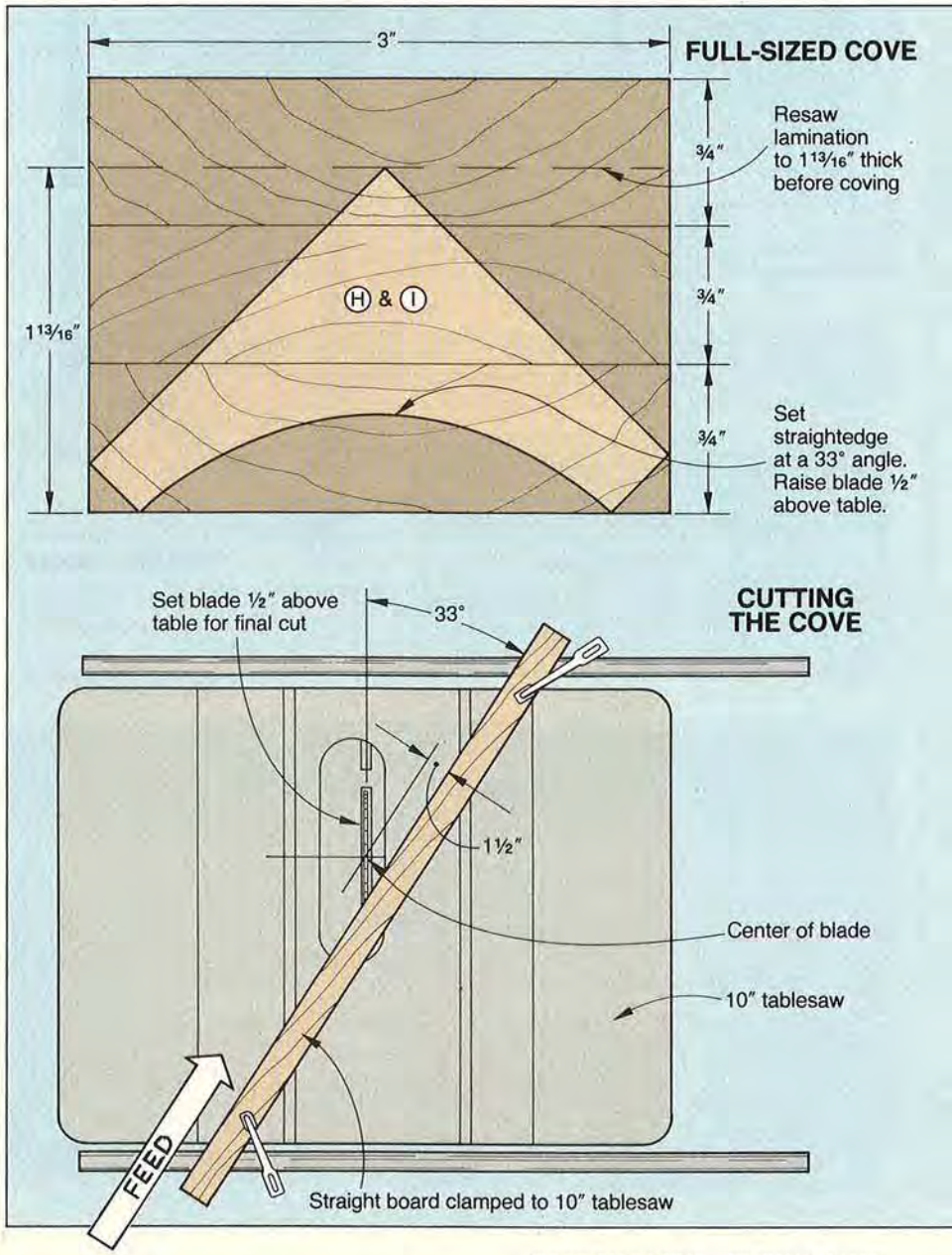
5 Clamp a piece of straight stock to the top of your 10" tablesaw where shown on the drawing *bottom right*. Raise the blade ⅛" above the saw table surface, and pass the workpiece over the blade. Continue to raise the blade and take light cuts (no more than ⅛" per pass) until you achieve the full ½" depth of the cove. (We found that an 80-tooth, carbide-tipped blade produced the smoothest cuts.)

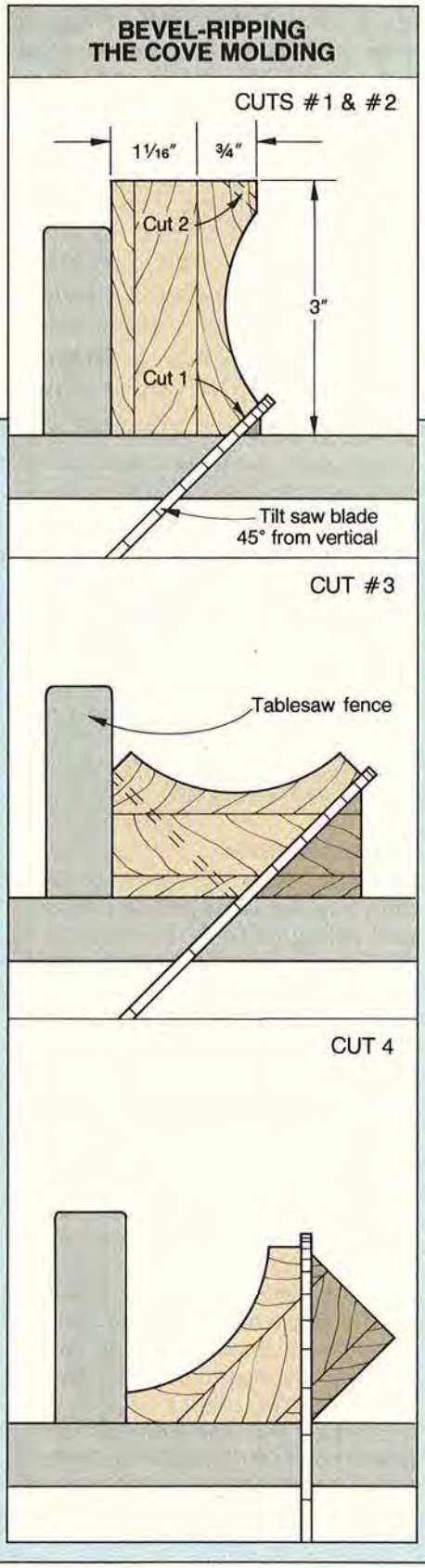
6 Follow the four-cut sequence on the *opposite page* to trim the edges of the molding to shape.

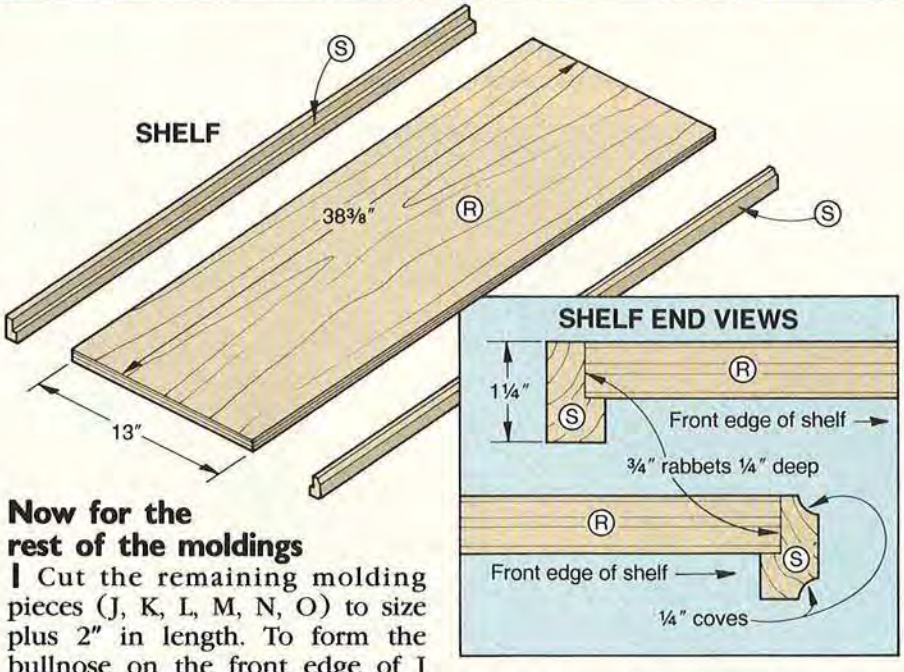
7 Miter-cut the front cove molding piece (H) and the two side pieces (I) to fit the front and sides of the cabinet.

8 Drill mounting holes through the cabinet for attaching the cove molding pieces (H, I). Glue and screw the pieces in place, flush with the top of the cabinet. (See the Cove Molding detail accompanying the Cabinet Top drawing.)









Now for the rest of the moldings

1 Cut the remaining molding pieces (J, K, L, M, N, O) to size plus 2" in length. To form the bullnose on the front edge of J and K, rout a pair of ⅛" roundovers along the front edge. See the Bullnose detail accompanying the Cabinet Top drawing.

2 With the back edges flush, glue part L between parts J. Repeat with the side pieces K and M. Miter-cut the ends, and then glue and clamp the trim strips J/L and K/M to the cabinet.

3 Miter-cut the bull-nosed strips N and O to length for both the cabinet top and bottom. Glue them into the previously cut dadoes in the cabinet.

4 Cut the base molding pieces (P, Q) to size plus 2" in length. Rout a ½" cove along the top outside edge of each.

5 Using the Cabinet Bottom drawing for reference, miter-cut the pieces to length, mark the radii on the front piece, and cut it to shape. Drill mounting holes through the cabinet and into the back side of the base molding pieces. Glue and screw the pieces to the cabinet bottom.

Cut and edge the shelves, then finish your cabinet

1 Cut the walnut plywood shelves (R) and front and back strips (S) to size plus 1" in length.

2 Cut or rout ¾" rabbets ¼" deep in each strip where shown on the Shelf drawing. Next, rout ¼" coves along the front edge where shown on the End View drawing.

3 Glue the strips to the front and back of the shelf. Later, crosscut both ends to trim the shelves to finished length. Sand smooth (we wrapped sandpaper around a ½" piece of dowel to sand the coves.)

4 Finish the cabinet. (We applied one coat of Watco Dark Walnut Oil Finish, followed by five coats of Watco Natural Oil Finish.)

5 Nail the shelf standards in the grooves, checking that the numbers on the standards are right-side up.

Buying Guide

• **Shelf standards.** 72" flush-mounted walnut-finished standard, catalog No. 34058 (four needed), $3.75 each. Supports for standard, catalog No. 33852, $3.95 for a pack of 20. Add $4.50 per order for P&H. Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374-9514.

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Project Design: Jim Downing
Photographs: Hopkins Associates
Illustrations: Kim Downing; Mike Henry
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DECORATIVE CARVING, SWISS

Wayne Barton was traveling light when he came to chip carve with the *WOOD*® magazine staff not long ago. That's because chip carving in the Swiss tradition calls for just two knives. They're the only tools he used to carve this beautiful weather station. Read on—we'll show you how to carve one yourself.

Tools and Supplies

We used these tools and supplies:
Basswood ¾×6½×15½"
Swiss chip-carving knives
- cutting knife
- stab knife

Layout tools
- compass
- metric ruler

Ceramic sharpening stones
- medium
- ultra-fine

Spray-on polyurethane finish

Sharp knives—the only way to carve

Chip carving with dull knives is like riding a bicycle with flat tires--you can do it, but it isn't very satisfying, and you have a hard time keeping control. "There is just no substitute for a sharp blade in carving," according to master carver Wayne Barton. So, before you try carving, put keen edges on those knives.

Sharpen both the cutting knife and stab knife on a medium ceramic stone and hone them on an ultra-fine one. For the cutting knife, lay the side of the blade on the stone and raise the back edge of the blade until you can just slip a dime under it. That's about 10°, the proper angle.

Sharpen the stab knife at the factory-set 30° angle. As you carve, touch up the edges occasionally on the ultra-fine stone.

STYLE

Learn the basics, then carve this masterpiece

Chip carving—cutting precise chips from wood to leave an engraved design—dates back to earliest civilizations. Swiss-style chip carving as practiced today has its roots in the Middle Ages.

Back then, peasants turned to *kerbschnitzen* (notch or groove carving) to embellish wooden furniture, utensils, and other household goods. Often, they decorated the home itself with carved doors and woodwork. Many designs reflected the intricate stone carving of the cathedrals.

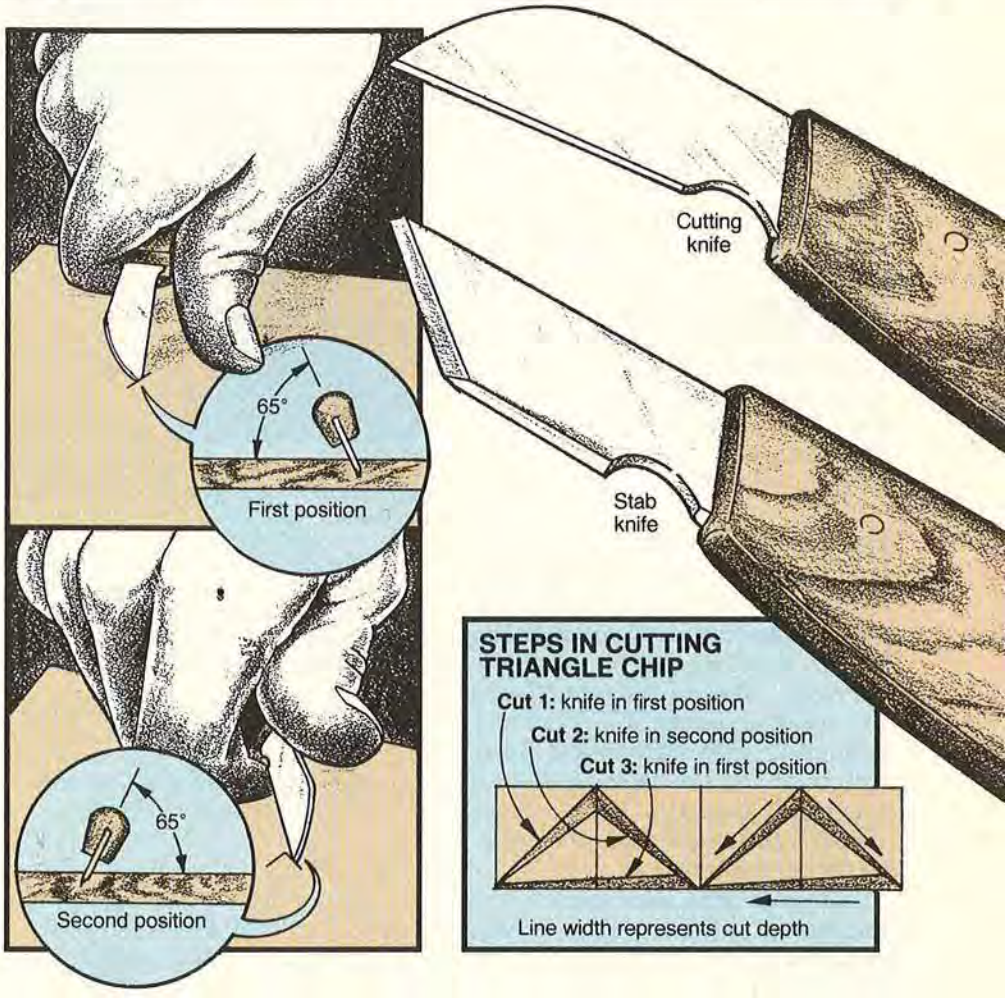
Get a grip before you start

Professional chip-carver Wayne Barton uses the two Swiss-style knives illustrated *far right,* the *cutting* knife to remove wood and the *stab* knife to make decorative impressions. You'll do most of your work with the cutting knife, and you'll always hold it in one of two positions.

For the first position, hold the knife in your right hand (or left, if you're left-handed), placing the first joint of the thumb at the blade end of the handle. Then close your fingers around the handle. With the workpiece in your lap, turn the inside of your wrist toward your body, resting your thumb and index-finger knuckle on the wood as you cut.

For the second position, move your thumb to the spine of the blade, tilt the blade away from you, and rest your index-finger knuckle on the wood. Compare the first and second positions in the illustrations, *above right.*

Maintain a 65° angle between the blade side and the workpiece in both positions. Keep your elbow close to your body when making straight or three-cornered chips, and make sure your knife hand rests on the work to help control your cuts.



Try out the basic cuts

You'll rely on three basic cuts for all of your chip carving—the straight chip (or straight line), the curved chip (or curved line), and the triangular chip. To begin cutting the straight chip, hold the knife in the first position, and cut along the pattern line in one direction. Then, turn the wood around and cut the other direction, releasing the chip. To vary chip size, change the cutting depth and the distance between your cuts, but don't change the angle of the blade to the work.

Cut the curved chip the same way, but raise the knife handle to reduce the length of the blade in the wood. For tighter-radius curves, raise the handle higher.

Carve the triangular chip in three steps (shown in the illustration *above).* Hold your knife in the first position for the first cut. Rotate the wood about 90°, and change to the second grip position for the next cut. Without turning the board, go back to the first grip for the third cut.

The stab knife isn't a cutting knife, it makes decorative impressions. Grip it as you would an ice pick, keeping the sharp edge toward you as shown on *page 46, Photo A.* With the knife perpendicular to the workpiece, force the tip into the wood to make an indentation. Rock the knife toward you to extend the line.

Continued

SWISS STYLE

Rout a carving board

Rout a decorative edge along both edges and ends of a ¾"-thick basswood board, leaving a 5 9/16 × 14 5/8" carving face on top. To determine the initial board size, rout an edge on scrapwood and measure the width of the cut. Then, add twice that measurement to the length and width of the pattern. (Our 5/32" roman-ogee bit formed a profile ⅜" wide, so we added ¾" to each pattern dimension, and cut our carving board to 6 5/16 × 15 3/8".)

Transfer the carving design to your board, following the instructions with the pattern, *opposite page*. Locate the center of the middle instrument hole at the center of your workpiece.

Let the chips fly!

Divide the carving into quarters, and then work from the outside in on each quarter. "Start with the largest chips in the area you're carving," Wayne advises. Carve the weather station's lace border beginning with the curved chips, followed by the diamonds and the small triangles. Then, carve the straight chips. Make the stab-knife impressions last.

"I like to start with cuts across the grain," Wayne says. As you progress, turn your work so you don't make the first cut along a new line toward work you've already done. If the wood splits out, apply a dab of glue with the knife tip to stick the flake back in.

Cut the curved lace border uniformly. Carve the chips shallow and narrow at each end and about 1/16-3/32" wide at the middle (*Photo B*). Carve the straight border chips a little less than 1/16" wide. The constant knife angle maintains proper depth for both.

At each corner, carve four triangular chips to form a diamond inside a square. Then, cut a notch at the center of each side of the diamond to create the flower. Extend the large chips surrounding the instrument locations almost to the centerline on each side as shown in *Photo C*. Hold the standard knife angle as you cut the large chips. They'll be about ¼" deep.

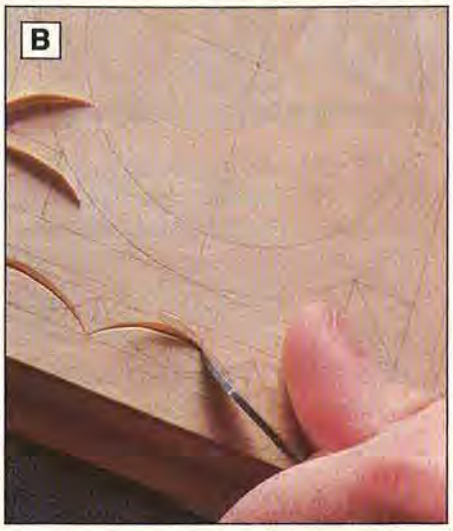
Aim for uniformity among similar elements, but don't be dismayed if they don't match precisely. That's expected. "So what, if it's a little off," Wayne comments. "It's hand work."

Now, the weather report

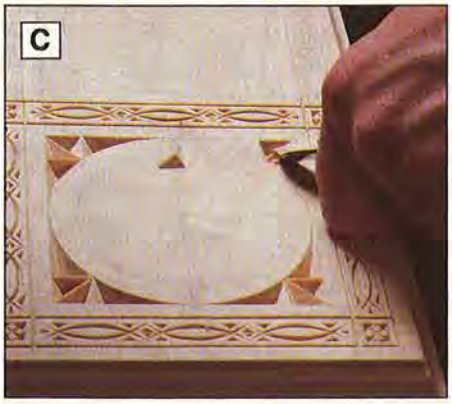
Bore a ¼" pilot hole at the center of each instrument location with a brad-point bit in a drill press. Then, guide on the pilot hole to bore each instrument hole with a holesaw. The Klockit instruments we used (see Buying Guide at *right)* mount in 2 5/16" holes.

Now, erase any leftover layout marks and sand the carving lightly, but don't sand away any of the sharp edges. Apply dull or matte-finish polyurethane with light spray applications from several angles. After the finish dries, mount the instruments and hang the board for all to see.

A. The stab knife leaves a triangular-impression when forced straight into the wood.



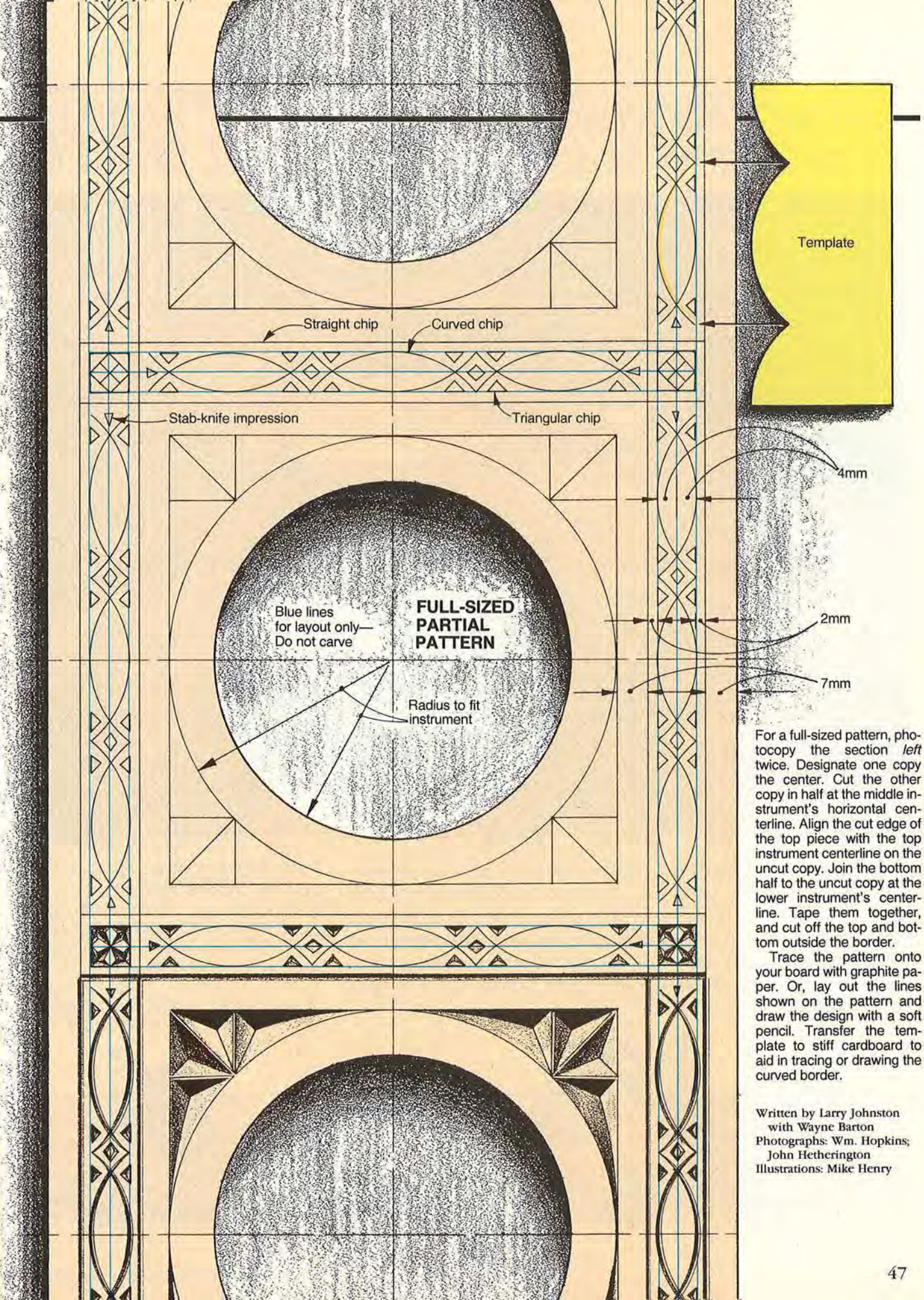
B. Your hand can't always rest fully on the board, but you can maintain control with your thumb on the surface, as here in cutting curved chips for the border near the edge of the board.



C. The cutting knife remains at a constant 65° side angle to the work. As a result, large, wide chips, such as those around instrument holes, will be deeper than the small ones in the border.

Buying Guide

- **Complete chip-carving kit.** Swiss-made cutting knife and stab knife; medium and ultra-fine ceramic sharpening stones; book, *Chip Carving Techniques and Patterns* by Wayne Barton; metric ruler; compass for layout; and two basswood practice boards; $73 ppd. in U.S., Alpine School of Woodcarving Ltd., 225 Vine Ave., Park Ridge, IL 60068.
- **Cutting knife and stab knife.** Knives only, $28 ppd. in U.S., address *above.*
- **Set of weather instruments.** Thermometer, hygrometer, and barometer, $18 per set ppd. in U.S., product No. 71103, Klockit, Box 636, Lake Geneva, WI 53147, or call 800/556-2548.



For a full-sized pattern, photocopy the section *left* twice. Designate one copy the center. Cut the other copy in half at the middle instrument's horizontal centerline. Align the cut edge of the top piece with the top instrument centerline on the uncut copy. Join the bottom half to the uncut copy at the lower instrument's centerline. Tape them together, and cut off the top and bottom outside the border.

Trace the pattern onto your board with graphite paper. Or, lay out the lines shown on the pattern and draw the design with a soft pencil. Transfer the template to stiff cardboard to aid in tracing or drawing the curved border.

Written by Larry Johnston
with Wayne Barton
Photographs: Wm. Hopkins;
John Hetherington
Illustrations: Mike Henry

Print this article

A smart alternative to radial-arm saws POWER

Ever since Rockwell introduced the first power mitersaw in 1967, these tools have become increasingly popular with contractors and home woodworkers alike. They're accurate, easy to adjust, portable, and safer and less expensive than radial-arm saws. But that's not all. Some new models let you make compound cuts (combined angle and bevel cuts) and crosscut stock up to 12" wide.

Four types of saws for you to choose from

Whatever your woodworking needs or budget, a saw in one of the following categories should meet your requirements.

- **Angle-only mitersaws** *(Retail price range: $190–$310 for 10"*

MITERSAWS

saws; models with blades as large as 15" cost up to $470.)

Similar to the original Rockwell mitersaw, machines such as the one illustrated *below*, have a turntable that rotates 45° (or more) left and right. The motor/blade assembly, mounted to the back of the turntable, moves with it.

Simply constructed, these machines adjust easily and cut accurately. To cut a bevel you must stand the workpiece on edge. For all practical purposes, you cannot make compound cuts with these.

• **Compound mitersaws** *(Retail price range: $150–$170 for 8¼" models; $215–$250 for 10" saws.)*

As shown in the illustration *bottom left*, the motor/blade assembly of these machines rotates just like an angle-only mitersaw does, and it also tilts up to 45° to the operator's left for bevel cuts.

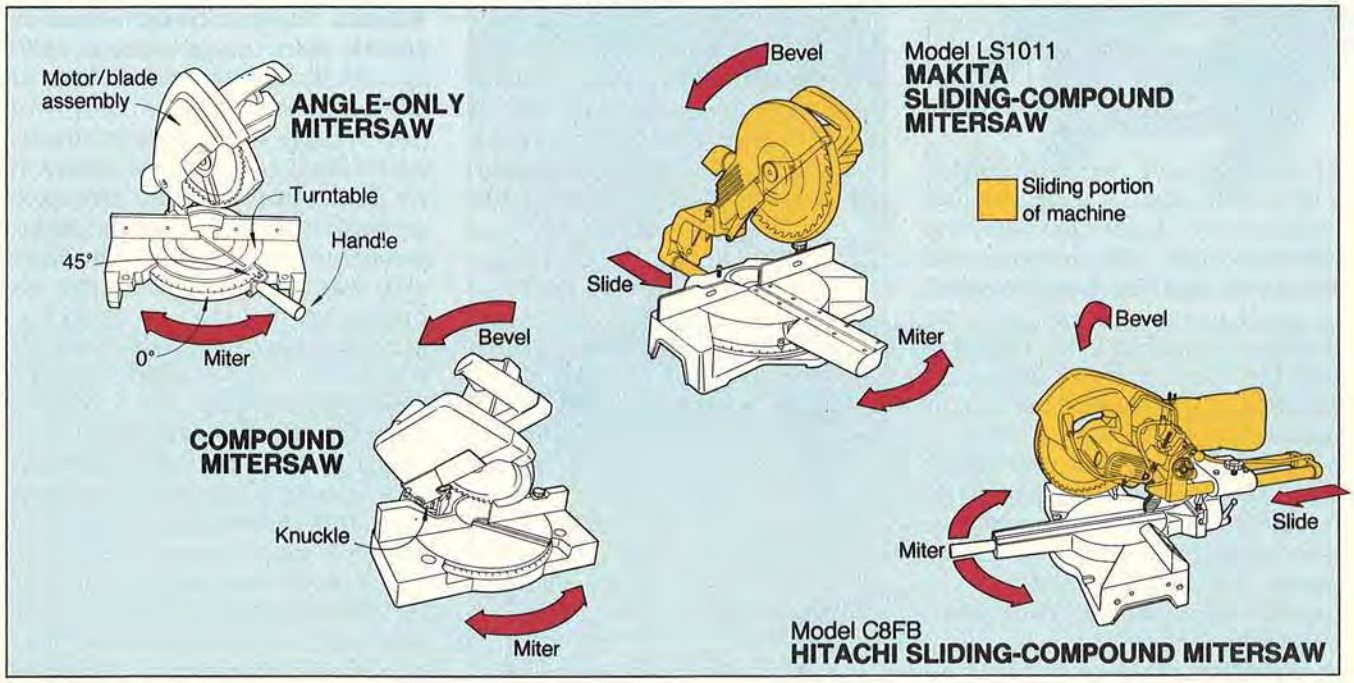
These qualities make it easier to bevel-cut many moldings and perform compound cuts such as those required for crown moldings. However, we found that these saws make rougher cuts than most of the angle-only mitersaws. The reason: compound mitersaws have a relatively complex "knuckle" that secures the motor/blade assembly to the turntable. Because these knuckles have more parts, which are made of thinner materials than found in the knuckles on many angle-only mitersaws, they also have more give in them.

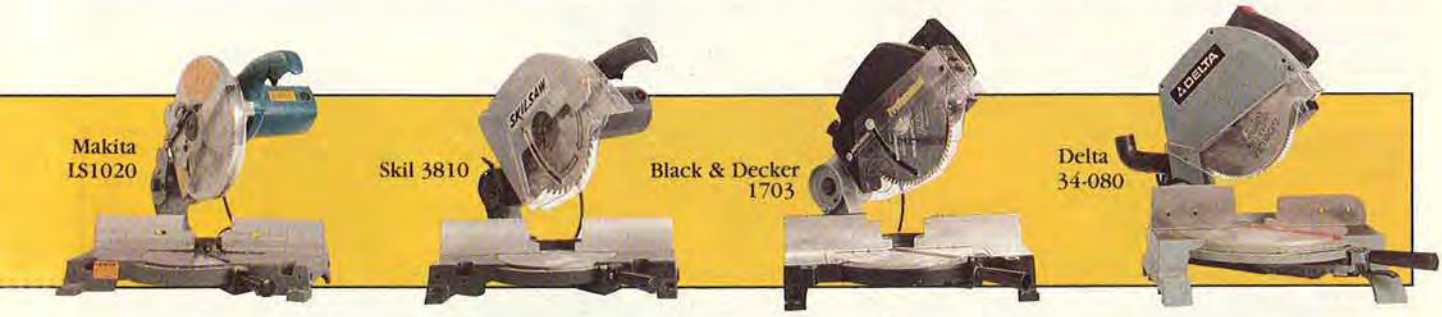
We consider these machines adequate for most carpentry tasks, but not accurate enough for fine furniture and cabinetry work.

• **Sliding-compound mitersaws** *(Retail price range: $400–$500.)*

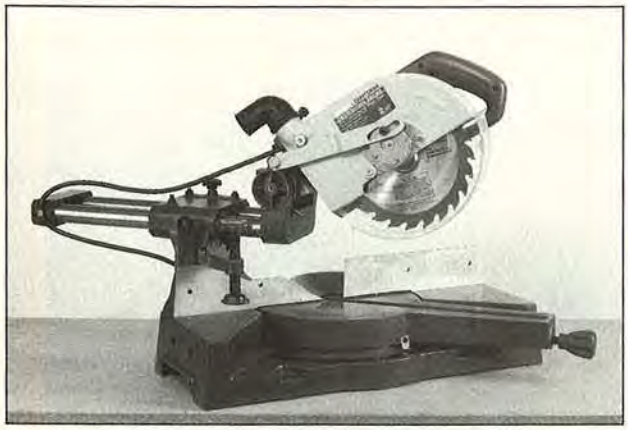
These machines give you the advantages of a compound mitersaw, and they have a sturdy knuckle mechanism that helps yield smooth cuts. And, because the motor-blade assembly slides forward, crosscutting capacity in-

Continued





POWER MITERSAWS



The AEG SKS 300 *left*, Sears 23488 *above left*, and Ryobi TSS220 *above right.*

creases to 12". To operate these saws, you pull the blade forward in its elevated position, turn on the motor, push the blade down into the front edge of the workpiece, and then push the saw to complete the cut.

As you can see by the illustrations on the *previous page,* the two tested models in this category have different sliding mechanisms. The Hitachi C8FB has exposed, dual sliding rods. The Makita LS1011 works in a similar fashion, but with one rod that slides in and out of the tool's base. Both systems work well.

AEG, Ryobi, and Sears plan to introduce sliding-compound saws that should be available by publication. (See photos *above* and *left.)* Although we couldn't obtain test samples of these machines, we were able to inspect prototypes of all three saws at various trade shows. Like the Hitachi, these machines have dual sliding rods. Unlike any other sliding compound saw on today's market, the AEG has a rugged induction motor and innovative dual dust-collection ports that draw dust from behind *and* below the blade (through the turntable). You'll find specifications for these three models on *page 54.*

Delta Sawbuck (with accessory legs).

• Delta Sawbuck and Sidekick
(Retail price range: about $570 for the Sawbuck and $400-plus for the Sidekick.)

Although these two products technically aren't mitersaws, we've included them because they come closer to being mitersaws than anything else. The Sidekick was not available for testing, but we've included its specifications on *page 54.* Delta officials tell us it will be similar to the Sawbuck in features, but downsized for affordability.

The Sawbuck cuts as well as any of the sliding-compound saws, but with the advantages of a 16" crosscut capacity and additional work support provided by its 52"-long table. Although the Sawbuck weighs more than any mitersaw, it has wheels for portability. You can purchase the Saw-

MITERSAWS OVER 10"

Hitachi C15FB

Ryobi TS380

Hitachi C12FA

buck with optional fold-up legs as shown on the *opposite page*, or simply place the machine on sawhorses. Because of this machine's design, you need to slide work onto the Sawbuck from either side of the table, a task which requires more side clearance than the other mitersaws in this article.

The Sawbuck accepts dado sets, and it stays in alignment through months of use because its twin rods are sturdily supported on both ends. If you have the money and space, we consider the Sawbuck a good investment.

Buying points to consider

• **Cutting capacity.** In the chart on *page 54*, you'll find the maximum cutting capacities supplied to us by manufacturers for their mitersaws. In our own tests, we discovered that among 10" angle-only mitersaws, only the Makita LS1030 and the Ryobi TS254 allow you to bevel-cut a 2×4 on edge. Other models came close, but did not quite complete the cut. (The other 10" saws required a spacer block between the fence and workpiece in order to make the cut.) In this same class, only the Ryobi TS254 and Delta 34-080 were capable of crosscutting a 2×6 at 90°.

• **Blades and blade changing.** Most mitersaws come with steel blades capable of only rough cuts. Our advice: discard this blade and buy a good-quality carbide-tipped crosscut blade. One company's representative told us that manufacturers include an inexpensive blade just so they can claim their saw comes with a blade. He admitted that the saws need carbide-tipped blades to perform optimally, but said that including good blades would push many saws past the "price points" set for those products.

The Freud LU91M010, *foreground*, has teeth with a 5° negative hook.

If you buy a sliding-compound saw, we suggest that you invest in a carbide-tipped blade with a 5° negative hook, such as the Freud LU91MO10 shown in the foreground *below left*. As you can see, the teeth of such a blade lean 5° backward rather than forward. This subtle difference results in a less aggressive cut that pushes the board down and back against the fence. In our tests, positive-hooked blades tended to grab the wood and lift it when used in a sliding-compound saw.

Since you'll need to change blades occasionally, we also rated the machines according to the ease of this operation (see "blade changing" in the chart on *page 55*). Machines that rated high in this area had spindle locks and easy-to-reach arbor nuts for quick changes. Most of the machines with low marks featured hard-to-remove guards that obstructed the arbor nut.

• **Handle types.** Even though D-handles, such as those found on a sliding-compound saw or Sawbuck, work well with any saw that you push through stock, we

Why we have a power mitersaw in the *WOOD*® magazine shop

A radial-arm saw may be the most versatile woodworking machine ever invented, but in our shop we've replaced the radial-arm saw with a sliding-compound saw. Here's why:

• **Safety.** Manufacturers have told us that more liability lawsuits result from accidents involving the radial-arm saw than any other woodworking machine. Because of the rotation of its blade, the motor/blade assembly of a radial-arm saw has a tendency to jump at the operator. This hazard is compounded during ripping because kickbacks are common. *In the* WOOD *magazine shop, we have never ripped a board with a radial-arm saw.*

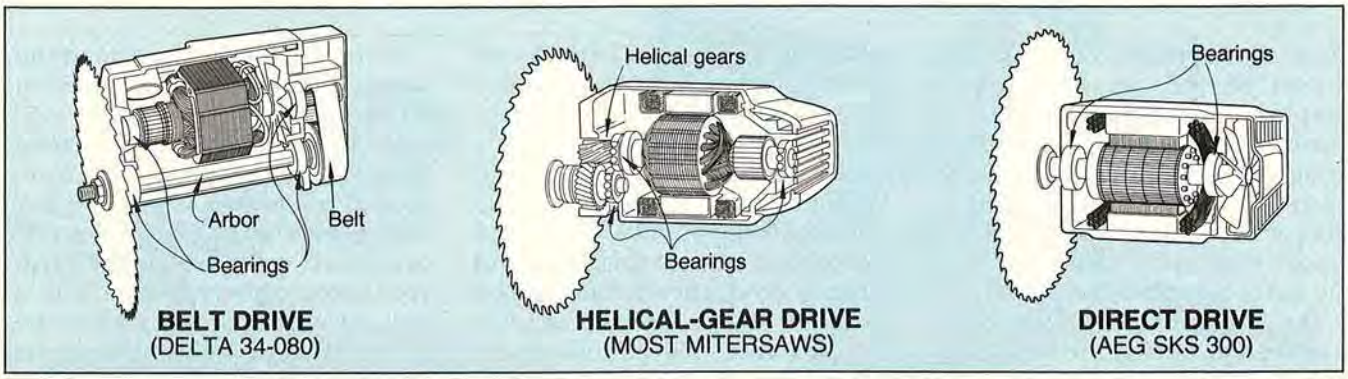
• **Accuracy and adjustments.** Once properly adjusted, a radial-arm saw will cut accurately, but making these adjustments can be tricky. And, radial-arm saws can slip out of adjustment from vibration or jarring.

• **Cost.** Radial-arm saws for the home shop range from $300 to $600. You can buy an accurate angle-only mitersaw for under $200, and a top-of-the-line sliding-compound mitersaw for under $500.

Continued

10" COMPOUND MITERSAWS

POWER MITERSAWS



prefer a chop-style handle on mitersaws with motor/blade assemblies that move downward in the cutting stroke. (See the photo *below* for examples of both styles.)

We prefer chop-style handles *(foreground)* over D-handles *(background).*

The chop-style handles feel more comfortable and don't seem to stress your hand and wrist as much as D-handles do.

• **Drive system.** Of all the mitersaws on today's market, only the Delta 34-080 has belt drive. All others have helical-gear drive, except for the AEG SKS 300 with direct drive via a 3,360 rpm induction motor. (See cutaway illustrations *above.)* The belt-drive feature gives the Delta machine unmatched "excellent" ratings in the "blade deflection" and "noise" columns of the chart on *page 55.* The reason? The Delta saw has a long arbor—like that found on a tablesaw—supported on both ends by ball bearings. This arbor reduces blade deflection, resulting in smoother cuts.

Although all universal-motor mitersaws make plenty of noise, the belt-driven Delta is the quietest of the batch.

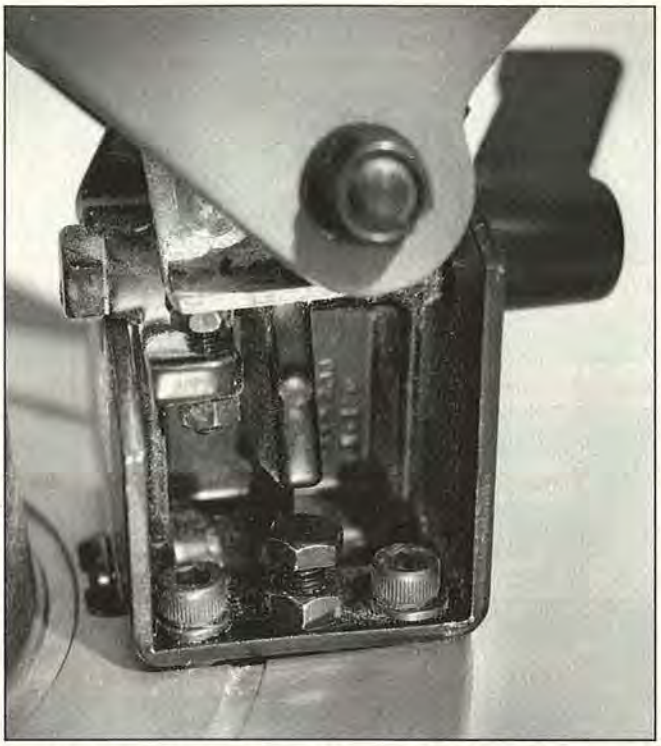
• **Blade guards.** To do its job effectively, a guard has to do these things: 1) Protect you from the blade throughout the cutting motion. 2) Allow you to view the blade at the point it enters your workpiece. 3) Swing out of the way as you make the cut without becoming stuck. 4) Be sturdy enough to last for the life of the saw. We combined these criteria and gave the machines a grade under the heading "guard" in the chart on *page 55.* Overall, the Hitachi saws had the best guards.

• **Machine weight.** If you plan to move your mitersaw from place to place, pay close attention to its weight (similar-looking models can vary tremendously in weight). The reason: one model has a cast-iron base and turntable while another has lighter aluminum components.

Which model should you buy?

As with most power tools, the old adage "You get what you pay for" applies to mitersaws. Nevertheless, we feel that the models listed on the *next page* have an edge over similarly priced competitors.

The Hitachi C10FA angle-only mitersaw, *right*, has a heavier knuckle assembly than the Ryobi TS254, *left.*



The Ryobi TS200 has adjustable stops for 0° and 45° bevel-cuts—a timesaving feature when making these cuts.

An easy-to-adjust depth stop is just one of several well-designed controls on the Hitachi C8FB.

• ***Angle-only mitersaws***

If you want to buy the best saw in this category, buy one of the Hitachis. As shown on the *opposite page,* all of the Hitachis have heavy-duty construction, especially in the critical knuckle area.

If you want to spend a little less, the Delta 34-080 is a good machine if you're not going to move it around too much or change blades a great deal. It's quieter than most mitersaws and solidly built.

For take-anywhere convenience and good cutting capacity at a down-to-earth price, we couldn't find a machine that matches the value of the Ryobi TS254.

• ***Compound mitersaws***

Among the 8¼" compound mitersaws, we give our highest marks to the Sears 23468 and Ryobi TS200. The Sears machine almost got our nod because it is the only saw in this class that will crosscut a 2×6. Unfortunately, it doesn't have stops for 0° and 45° bevels, so you have to set these each time you change them. Although the Ryobi won't crosscut a 2×6, it has positive 0° and 45° bevel-stops (see photo *above left*), and its light weight aids portability. We found its modified D-handle a little awkward.

The three 10" models in this category—supplied by Delta, Sears, and Tradesman—left us unimpressed. Except for some minor modifications, all appear to be essentially the same machine. They suffer from poor dust collection (almost no sawdust winds up in the dust bag) and poorly engineered guards that leave the back of the blade exposed.

• ***Sliding-compound mitersaws***

Because of its 10" blade, the Makita LS1011 has slightly more cutting capacity than the Hitachi C8FB. However, we found the Hitachi easier to adjust with better locking mechanisms and stops. For example, note the simple but effective depth-stop mechanism in the photo *above right.*

Because the Hitachi has a split fence with a large gap between the two halves, the machine requires an auxiliary wooden face for cutting small workpieces (the Makita does not require such a face). All in all, choosing between these two models is a toss-up.

Hitachi C8FB

You may also want to take a serious look at the AEG SKS 300. Although we weren't able to test one, this saw has some impressive features. In addition to its rugged induction motor and dual dust-collection points, the AEG comes standard with a quick-action work clamp and a negative-hook, carbide-tipped blade.

Written by Bill Krier
Product testing: George Granseth
Photographs: Wm. Hopkins
Illustrations: Kim Downing

POWER MITERSAWS

COMPARISON OF 3

	MANUFACTURER/ IMPORTER	MODEL	BLADE		CAPACITY[2]				MOTOR				
			SIZE (INCHES)	TYPE[1]	CROSSCUT	45° MITER	45° BEVEL	COMPOUND 45° MITER 45° BEVEL	AMPS	NO-LOAD SPEED (RPM)	BRAKE[3]	SPINDLE LOCK (YES/NO)	DRIVE[4]
SLIDING-COMPOUND MITERSAWS	AEG	SKS 300	10	C	2 1/16 × 11 25/32	2 1/8 × 8 5/16	2 1/8 × 11 25/32	2 1/8 × 8 5/16	N/A	3,360	E	Y	D
	DELTA	Sawbuck 33-050	8	S	2 3/4 × 16	1 3/4 × 12	1 3/4 × 16	1 3/4 × 12	15	5,500	E	Y	G
	DELTA	Sidekick 33-060	6 1/2	C	1 1/2 × 11 1/4	1 1/2 × 9 1/4	1 5/8 × 11 1/4	1 5/8 × 9 1/4	12	5,500	E	Y	G
	HITACHI	C8FB	8 1/2	C	2 9/16 × 12	2 9/16 × 8 5/8	1 25/32 × 12	1 25/32 × 8 21/32	9.5	4,900	E	Y	G
	MAKITA	LS1011	10	S	2 15/16 × 12	2 15/16 × 8 15/32	1 9/16 × 12	1 9/16 × 8 15/32	12	4,600	E	Y	G
	RYOBI	TSS220	8 1/2	C	2 9/16 × 12	2 9/16 × 8 5/8	1 25/32 × 12	1 25/32 × 8 5/8	10	4,500	E	Y	G
	SEARS	23488	8 1/4	C	2 1/2 × 12	2 1/2 × 8 5/8	1 3/4 × 12	1 3/4 × 8 5/8	10	5,000	E	Y	G
COMPOUND MITERSAWS	BLACK & DECKER	9425	8 1/4	S	2 1/4 × 5 1/4	2 1/4 × 3 3/4	1 3/4 × 5 1/4	1 3/4 × 3 3/4	8	3,600	E	N	G
	DELTA	36-040	8 1/4	S	2 1/8 × 5 1/8	2 1/8 × 3 1/2	1 1/2 × 5 1/8	1 1/2 × 3 1/2	9	5,200	E	Y	G
	DELTA	36-220	10	S	2 5/8 × 5 3/4	2 5/8 × 4 1/4	1 7/8 × 5 3/4	1 7/8 × 4 1/4	15	4,900	E	Y	G
	RYOBI	TS200	8 1/4	S	2 3/16 × 5	2 3/16 × 3 35/64	1 9/16 × 5	1 9/16 × 3	8	5,000	E	Y	G
	RYOBI	TS260	10	S	3 5/16 × 5 3/4	3 5/16 × 4 3/4	2 1/16 × 4 3/4	2 1/16 × 4 3/16	12.5	4,800	E	Y	G
	SEARS	23468	8 1/4	S	2 1/16 × 5 1/2	2 1/16 × 3 3/4	1 1/2 × 5 1/2	1 1/2 × 3 3/4	9	5,000	E	N	G
	SEARS	23460	10	S	2 5/8 × 5 3/4	2 5/8 × 4 1/4	1 7/8 × 5 3/4	1 7/8 × 4 1/4	15	4,900	E	Y	G
	TRADESMAN	8330A	10	S	2 5/8 × 5 3/4	2 5/8 × 4 1/4	1 7/8 × 5 3/4	1 7/8 × 4 1/4	15	4,900	E	Y	G
ANGLE-ONLY MITERSAWS	BLACK & DECKER	1703	10	C	3 1/8 × 4 3/4	3 1/8 × 3 3/8	–	–	12	5,500	M	N	G
	DELTA	34-080	10	S	2 1/2 × 5 3/4	2 3/8 × 4	–	–	13	4,500	ME	N	B
	HITACHI	C10FA	10	S	3 1/8 × 4 5/16	3 1/8 × 3 1/8	–	–	15	4,500	E	Y	G
	HITACHI	C12FA	12	S	3 3/4 × 5 5/8	3 3/4 × 3 5/16	–	–	15	4,000	E	Y	G
	HITACHI	C15FB	15	S	4 3/4 × 7 9/32	4 3/4 × 5 15/32	–	–	15	3,400	E	Y	G
	MAKITA	LS1020	10	S	3 1/2 × 4 3/4	3 1/2 × 3 1/2	–	–	12	4,100	E	Y	G
	MAKITA	LS1030	10	S	3 1/2 × 4 15/16	3 1/2 × 3 1/2	–	–	12	4,600	E	Y	G
	RYOBI	TS254	10	S	3 9/16 × 5 9/16	3 9/16 × 3 7/8	–	–	12.5	5,000	E	Y	G
	RYOBI	TS380	15	S	4 13/16 × 7 1/4	4 13/16 × 5 7/16	–	–	15	3,400	E	Y	G
	SKIL	3810	10	S	3 1/2 × 4 1/4	3 1/2 × 3 1/2	–	–	15	5,200	E	Y	G

1. (C) Carbide-tipped, (S) Steel
2. Height × width (inches)
3. (E) Electric, (M) Manual, (ME) Manual electric (electric brake engages when you press button on handle)
4. (B) Belt (D) Direct (G) Gear
5. (A) Aluminum (CI) Cast iron (P) Plastic
6. (DB) Dust bag, (DH) Dust hose, (FL) Folding legs, (LG) Long extension guides, (QC) Quick-action clamps, (SC) Screw clamps, (SG) Short extension guides, (WT) Worktable
7. (C) Chop-style, (D) D-handle (*) See photo on *page* 52
8. E Excellent G Good F Fair P Poor
9. (G) Germany, (J) Japan, (T) Taiwan, (U) United States
10. Selling prices based on ads, catalogs, and dealer inquiries at time of article's production.

TYPES OF MITERSAWS

STOPS			BASE MATERIALS [5]		ACCESSORIES [6]		PERFORMANCE EVALUATION [8]							
MITER	BEVEL	FRAME	TURNTABLE	STANDARD	OPTIONAL	HANDLE TYPE [7]	GUARD	BLADE CHANGING	NOISE	BLADE DEFLECTION	WEIGHT (POUNDS)	COUNTRY OF ASSEMBLY [9]	LIST PRICE	SELLING PRICE [10]
0, 15, 22.5, 30, 45	0, 45	A	A		DH, LG, QC, WT	*	NOT AVAILABLE AT TIME OF TESTING				46.3	G	$999	$599
0, 22.5, 31.6, 45	0, 45	P	P		FL	D	G	F	G	G	78	U	781	570
0, 22.5, 31.6, 45	0, 45	A	A		SC, LG	D	NOT AVAILABLE AT TIME OF TESTING				48	T	500-plus	400-plus
0, 15, 22.5, 31.6, 35.3, 45	0, 30, 33.9, 45	A	A	DB	LG, SC, SG	D	G	E	F	G	37.4	J	859	450
0, 15, 22.5, 30, 45	0, 45	A	A	DB, SC		D	G	F	F	G	34.8	J	818	450
0, 15, 22.5, 31.5, 45	0, 45	A	A	DB		D	NOT AVAILABLE AT TIME OF TESTING				44	J	N/A	N/A
0, 15, 22, 30, 45	0, 45	CI	CI	SC	DB	D	NOT AVAILABLE AT TIME OF TESTING				70	T	–	400
0, 22.5, 45		P	P			C	G	F	G	F	17	G	245	160
0, 15, 22.5 30, 45	0, 45	A	A	DB		D	G	F	G	F	15.75	T	224	170
0, 15, 22.5, 30, 45	0, 45	CI	A			D	F	G	G	F	60	T	350	240
0, 22.5, 45	0, 45	P	A		DB	D	F	E	G	F	14	U	306	170
0, 15, 22.5, 31.5, 45	0, 34, 45	CI	CI		DB	C	NOT AVAILABLE AT TIME OF TESTING				52	T	N/A	N/A
0, 22.5, 45	–	CI	CI		DB, SC	C	G	F	G	F	37.5	T	–	150
0, 22.5, 45	0, 45	CI	CI	DB	SC, SG	C	F	G	G	F	60	T	–	250
0, 15, 22.5, 30, 45	0, 45	CI	CI	DB, SC, SG		C	F	G	G	F	60	T	330	215
0, 22.5, 45	–	A	A	DB		D	P	P	F	G	28	U	350	190
0, 22.5, 45	–	CI	A		DB	D	P	P	E	E	55	T	308	220
0, 22.5, 30, 45	–	A	A	DB, SC, SG	LG	C	E	G	G	G	44	J	538	300
0, 15, 22.5, 30, 45	–	A	A	DB, SC, SG	LG	C	E	G	G	G	40	J	632	340
0, 15, 22.5, 30, 45	–	A	A	DB, SC, SG	LG	C	E	G	G	G	55	J	745	400
0, 15, 22.5, 30, 45	–	CI	CI	DB, SC, SG		C	G	F	F	G	40	J	539	310
0, 15, 30, 45	–	A	A	DB, SC, SG		C	G	F	G	G	23.3	J	414	260
0, 22.5, 45	–	A	A		DB, LG, SC, SG	C	F	G	F	G	33.5	U	397	200
0, 22.5, 30, 45	–	A	A	DB	LG, SC, SG	C	P	G	G	G	50.6	J	793	470
0, 15, 22.5, 30, 45	–	CI	CI	DB	SC, SG	C	P	P	P	G	51	T	350	240

MANUFACTURERS' LISTING:

AEG
800/243-0870 or 203/447-4600

Black & Decker
800/762-6672 or 301/239-5300

Delta
800/438-2486 or 412/963-2400

Hitachi
404/925-1774

Makita
714/522-8088

Ryobi
800/525-2579
803/226-6511

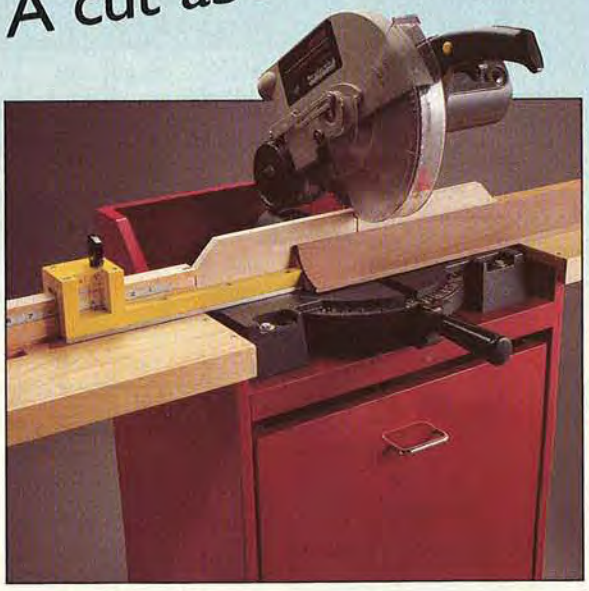
Sears
Visit your nearest store
or telecatalog center

Skil
312/286-7330

Tradesman
(Power Tool Specialists)
800/243-5114
203/654-1761

Custom MITERSAW CABINET

A cut above the rest



If you're sold on the safety and accuracy of a mitersaw, or want to replace your old radial-arm saw, have we got the project for you! Our unit comes complete with a stand and a roll-out bin for chips and cut-offs. Add to that an extended fence and its hairline-accurate stop, and you've put your miter- and cross-cutting problems to an end.

Note: *We designed this cabinet to support a DeWalt 8½" mitersaw measuring 18" wide by 20" deep. You may need to change some dimensions to fit your mitersaw.*

Let's start with the stand

1 Cut the stand sides (A), back (B), and shelf (C) to the sizes listed in the Bill of Materials from ¾" plywood (we used birch).

2 Cut a ¾" rabbet ⅜" deep along the back inside edge of each cabinet side (A) where shown on the Stand and Mobile Bin drawing on the *opposite page.*

3 Using the dimensions on the drawing, mark the angled layout on the top end of the side pieces, and cut the ends to shape.

4 Cut the shelf banding strip (D) to size, and then cut or rout a ¾" rabbet ⅜" deep along the top inside edge. Glue and clamp the strip to the front edge of the shelf (C) with the ends and top surfaces flush.

5 Cut the two shelf supports (E) and rear dust-deflector strip (F) to size.

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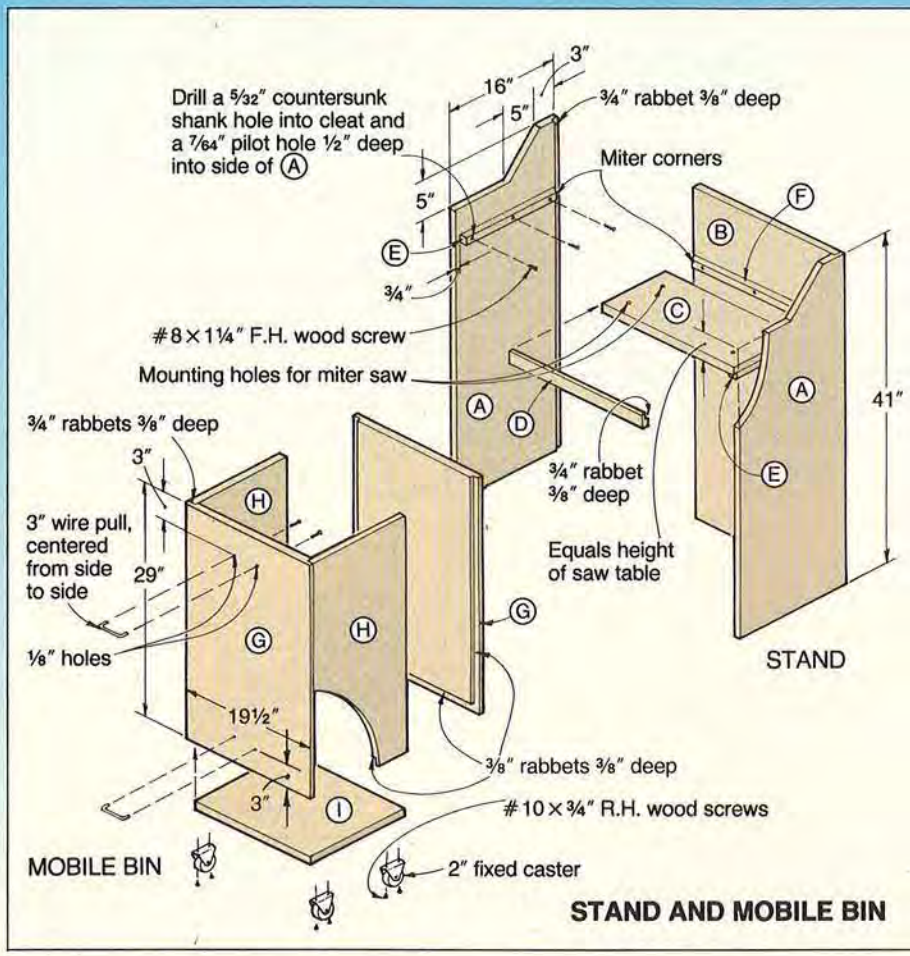


STAND AND MOBILE BIN

Bill of Materials

Part	Finished Size T	W	L	Matl.	Qty.
STAND					
A sides	¾"	16"	41"	BP	2
B back	¾"	20¾"	41"	BP	1
C shelf	¾"	8¾"	20"	BP	1
D band	¾"	1½"	20"	B	1
E shelf supports	¾"	1"	14½"	B	2
F dust strip	¾"	1"	20"	B	1
MOBILE BIN					
G front & back	¾"	19½"	29"	BP	2
H sides	¾"	14¼"	29"	BP	2
I bottom	¾"	14¼"	18¾"	BP	1
TABLES AND FENCES					
J table	¾"	4⅝"	75"	BP	1
K table	¾"	5⅜"	18"	BP	1
L band	¾"	1½"	75"	B	1
M band	¾"	1½"	18"	B	1
N spacers	¾"	¾"	1"	B	10
O fence	1 1/16"	2¾"	75"	B	1
P fence	1 1/16"	2¾"	18"	B	1
Q fence	½"	3"	21"	B	1
R support	¾"	4¼"	35¼"	BP	1
S braces	¾"	10"	10"	BP	2
SUPPORT BRACKET					
T support arm	¾"	2"	13⅜"	B	1
U cleat	¾"	1"	2"	B	1

Material Key: BP—birch plywood, B—birch
Supplies: #8×1¼" flathead wood screws, #8×1½" flathead wood screws, #8×2" flathead wood screws, #8×3" flathead wood screws, #10×2½" flathead wood screws, 4—2" fixed casters with #10×¾" roundhead wood screws for mounting, 2—¼" threaded inserts, 2—¼" nuts, 2—adjustable nylon floor glides, 2—3" metal wire pulls, adhesive-backed tape measure, enamel paint.

Note: Position the fixed shelf (C) so the table of your mitersaw is flush with the top surface of the extension tables (J, K). Depending on your particular mitersaw, your shelf height may be different from ours.

6 Measure and mark the locations for the shelf supports and dust strip where shown on the Stand and Mobile Bin drawing *above*. Then, drill and countersink mounting holes through the stand assembly, and screw the shelf supports and dust strip to the stand.

7 Glue and clamp the stand together, checking for square.

It's time to roll out the mobile bin

1 Cut the bin front and back (G), sides (H), and bottom (I) to size (we used birch plywood).

2 Cut rabbets along the front, back, and side pieces to the sizes given on the Stand and Mobile Bin drawing.

3 Glue and clamp the bin together, checking for square. Later, remove the clamps, drill mounting holes, and mount four 2" fixed casters to the bottom of the bin. Drill the holes for a pair of 3" wire pulls in the bin front. The bottom pull makes for ease in lifting when discarding the contents.

Let's make the extension table and fence assemblies

1 Cut the left-hand tabletop extension (J), right-hand tabletop extension (K), banding strips (L, M), and spacers (N) to size. The spacers allow chips and sawdust to fall through the extension tables, avoiding buildup against the fence and stop.

2 Cut the fences (O, P, Q) to size. For smooth sliding of the stop on part O later, ensure that part O is uniform in thickness and width.

3 Cut a 17/32" groove 1/16" deep along the front face of part O to house the tape measure.

Continued

MITERSAW CABINET

4 Using the Top View detail accompanying the Exploded View drawing for reference, cut a ¼" slot ½" deep across one end of parts O and P. Then, cut a ½" rabbet ¼" deep across both ends of the middle replaceable fence (Q) to form a tongue that will mate in the outside-fence slots.

5 Cut a pair of 5/16" grooves ¼" deep along the front and back of the left-hand fence (O) where shown on the End View detail.

6 Glue and screw the spacers (N) between the left-hand fence (O) and table (J) with the top surface of the table flush with those of the spacers. Glue and clamp the banding strips (L, M) to the front of their respective tables.

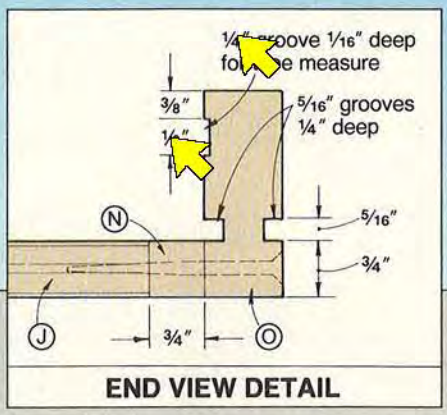
7 Cut the left-hand fence-assembly support (R) and braces (S) to size. Drill the mounting holes and screw a pair of ¼" T-nuts into the mounting holes in the bottom of the support (R) to the sizes shown on the Foot detail accompanying the Exploded View drawing *below*.

8 Glue and screw the right-hand fence (P) and brace (S) to the table (K). Then, as shown in the photo on the *opposite page*, screw the table (K) and brace (S) to the right-hand stand side (A). (We used a square-cut corner support to hold the table assembly square when attaching it to the stand.)

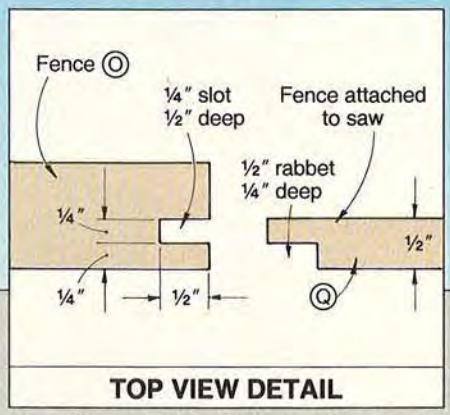
9 Drill the mounting holes, and glue and screw the support (R) and brace (S) to the left-hand table assembly.

Anchor the long extension table to the wall

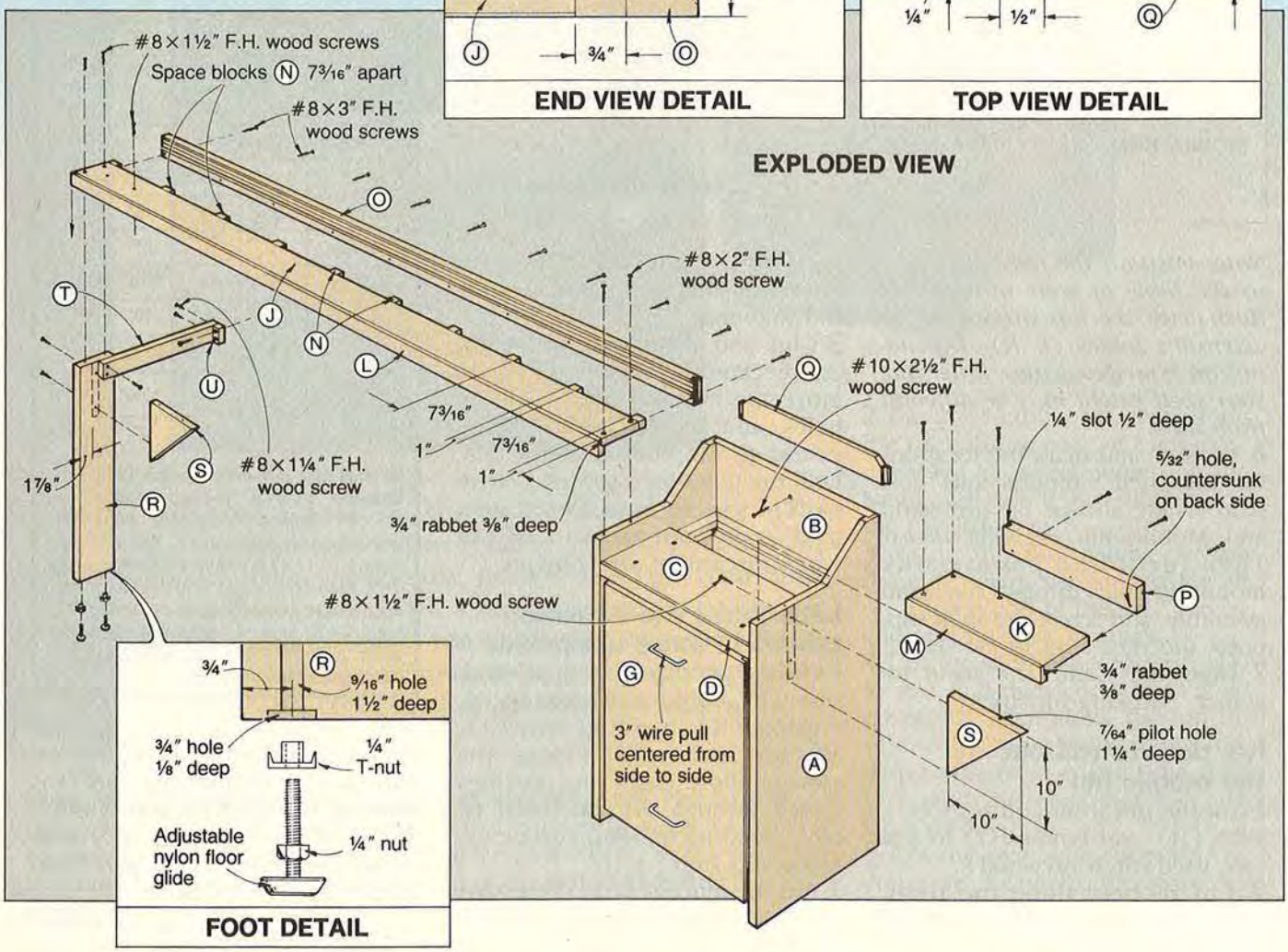
1 Position the stand with its back edge flush with a wall in your workshop. Position your miter-



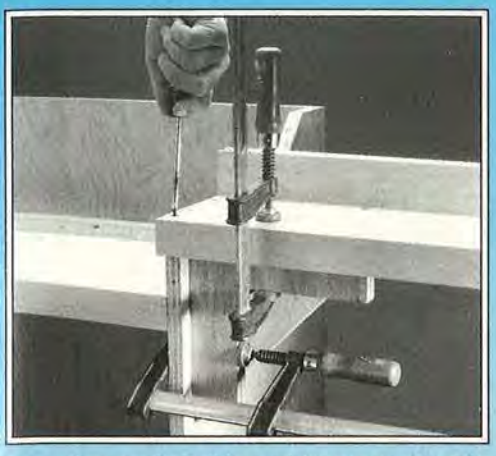
END VIEW DETAIL



TOP VIEW DETAIL



FOOT DETAIL



Fasten the table and brace to the bin side, using a square-cut corner support for stability.

saw on the stand. Verify that the top surface of the saw table is flush with the right- and left-hand extension tables. Adjust the shelf height if necessary.

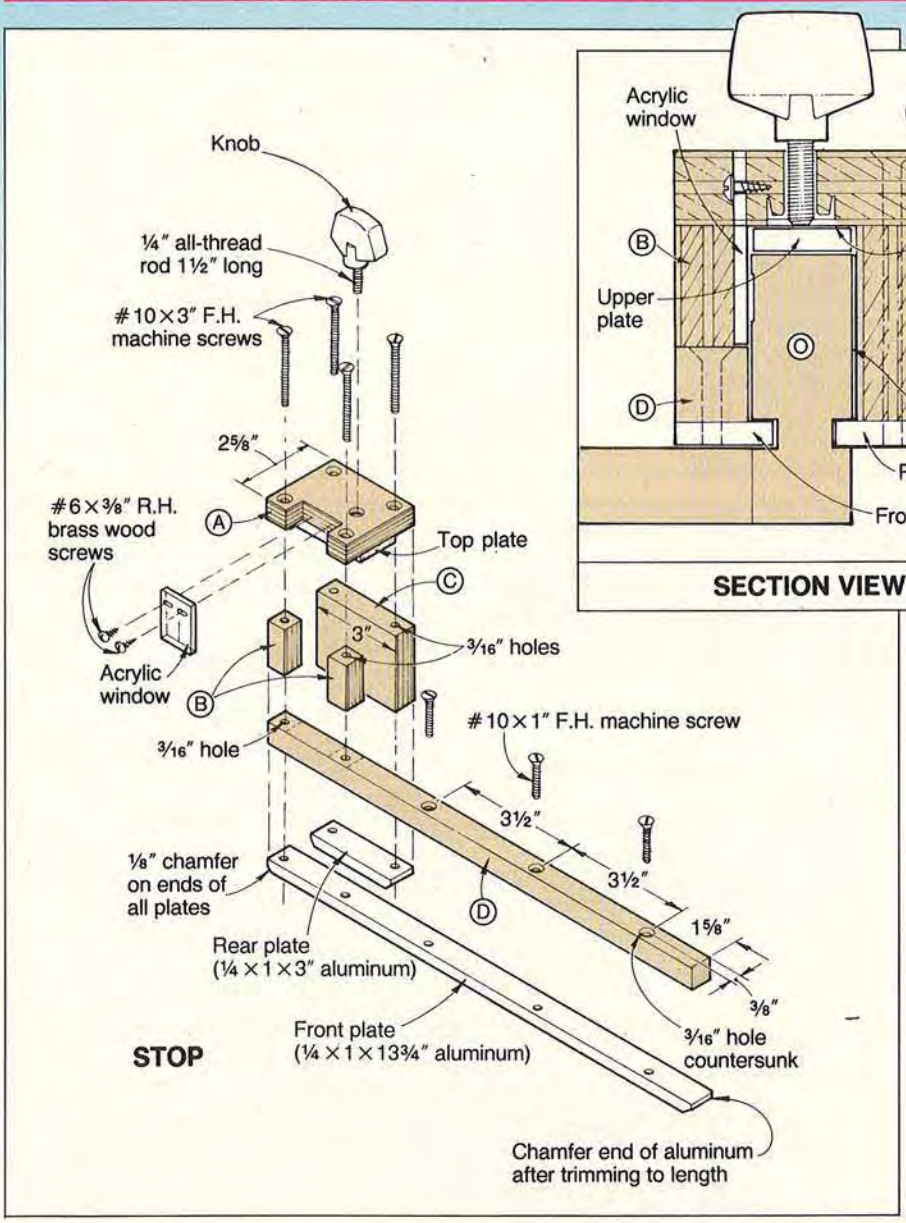
2 Fasten the left-hand fence to the stand, and adjust the floor glides in the end support (R). Use a straightedge or long straight board to check that the left-hand tabletop (J) aligns with right-hand tabletop (K).

3 Cut the support arm (T) and cleat (U) to size.

4 Sand, prime, and paint the stand, bin, and table support (see the opening photo for specifics). We used red aerosol enamel.

5 Attach the support arm and cleat to the end support (R). Screw cleat to your shop wall to brace the end of the left-hand extension table against the wall.

6 Drill a mounting hole in the stand back (B) where shown on the Exploded View drawing, allowing you to anchor the stand firmly to the wall.



For consistent lengths, add the stop block

1 Cut the stop top (A), posts (B), back (C), and extension (D) to sizes listed in the Bill of Materials.

2 Using the Stop and Parts View drawings for locations, epoxy the parts together where shown. After the epoxy has cured, drill and countersink all holes through the assembly where dimensioned on the

Continued

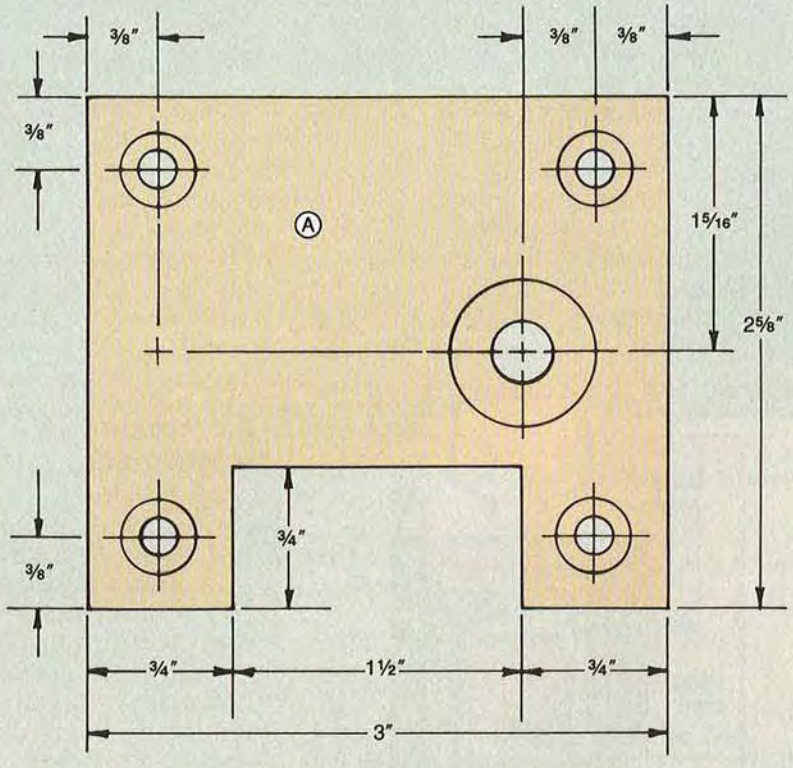
Bill of Materials

Part	Finished Size T	W	L	Matl.	Qty.
STOP BLOCK					
A top	¾"	2⅝"	3"	BP	1
B posts	¾"	¾"	1¼"	BP	2
C back	¾"	2"	3"	BP	1
D* extension	¾"	¾"	13¾"	B	1

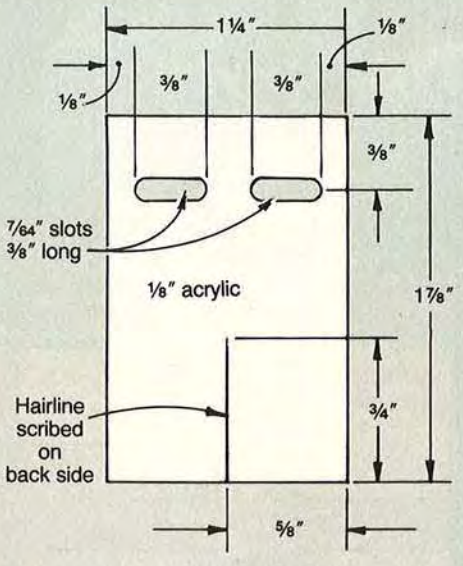
*Initial size before cutting to length.

Material Key: BP—birch plywood, B—birch
Supplies: epoxy, #6×⅜" roundhead brass wood screws, #6×⅝" flathead wood screw, ¼" all-thread rod 1½" long, ¼" T-nuts, #10×1" flathead machine screws, #10×3" flathead machine screws, ⅛×1¼×1⅞" acrylic, ¼×1×20" aluminum bar stock.

MITERSAW CABINET



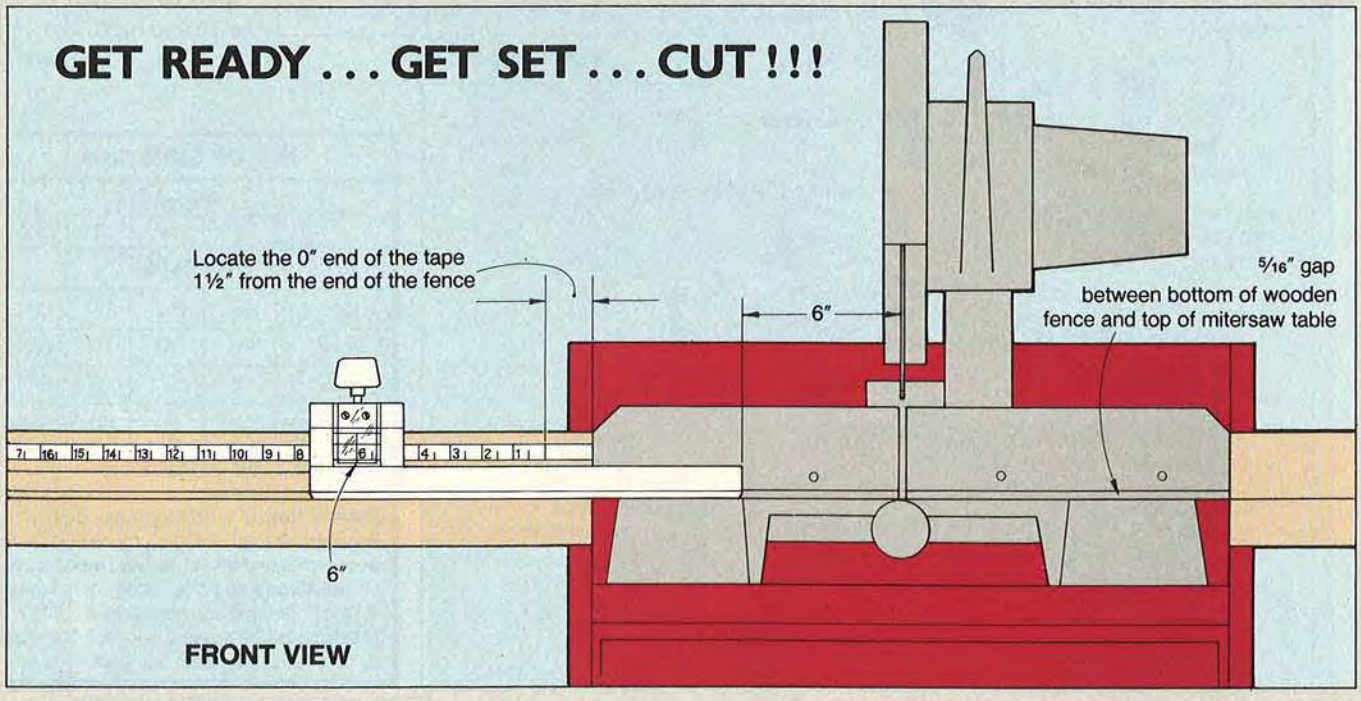
TOP VIEW
(FULL-SIZED)



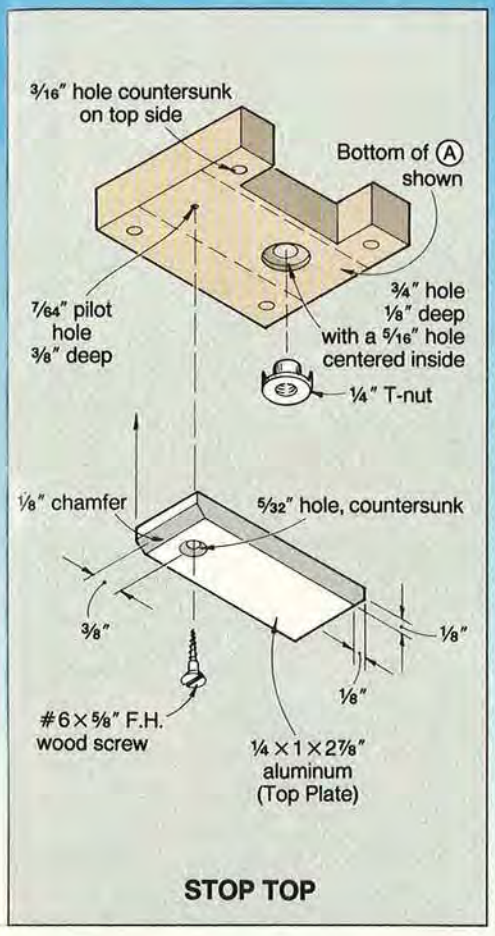
ACYRLIC
WINDOW
(FULL-SIZED)

PARTS VIEW

GET READY . . . GET SET . . . CUT ! ! !



FRONT VIEW


3/16" hole countersunk on top side
Bottom of (A) shown
7/64" pilot hole 3/8" deep
3/4" hole 1/8" deep with a 5/16" hole centered inside
1/4" T-nut
1/8" chamfer
5/32" hole, countersunk
3/8"
1/8"
1/8"
#6 × 5/8" F.H. wood screw
1/4 × 1 × 2 7/8" aluminum (Top Plate)

STOP TOP

drawing. Don't forget to drill the counterbored hole on the bottom side of the top (A); see the Stop Top drawing at *left* for reference.

3 From ¼ × 1" aluminum, cut the top, front, and rear plates to length (we used a hacksaw).

4 Clamp or tape the aluminum strips to the stop assembly where shown on the Section View detail accompanying the Stop drawing. Using the existing holes in the stop as guides, drill 5/32" holes through the aluminum. Using a 10–24 tap, thread the holes in the front and rear plate to mate with #10 machine screws.

5 Drill and countersink a 5/32" hole in the aluminum Top Plate where shown on the Stop Top drawing.

6 Epoxy a ¼" T-nut into the counterbored hole on the bottom side of part A. Be careful not to get epoxy in the threaded opening of the T-nut.

7 From ⅛" acrylic, cut the window to the size shown on the Parts View drawing. Drill holes side by side to form a pair of adjustment slots. Scribe a line down the center of the window. Highlight the line with a black marker.

8 Sand a chamfer on each end of the aluminum top plate where shown on the Stop Top drawing.

Assemble the stop pieces

1 Screw the three aluminum plates to the stop assembly.

2 Cut a piece of ¼" all-thread rod to 1½" long. Epoxy and thread one end into the knob. Sand or grind a slight chamfer onto the bottom end of the threaded rod.

3 Fasten the top plate to the stop top where shown on the Stop Top drawing. Back the screw out slightly to create a 1/16" gap between the end of the plate and the stop top (A) where shown on the Section View drawing accompanying the Stop drawing.

4 Mask the aluminum, and paint the stop. Fasten the acrylic window to the stop so the screws are centered in the adjustment slots.

5 Cut a piece of milk-jug plastic to 1⅝ × 3". Using double-faced cloth-backed tape, adhere the plastic to part C where shown in the Section View detail. The plastic helps the stop slide smoothly.

Set your mitersaw on the shelf (C) and check that the top surface of the saw table is flush with the top surfaces of the extension tables (K, L). Slide the middle fence (Q) in position, leaving a 5/16" gap between the bottom edge of the fence and the top edge of the mitersaw table. See the Front View drawing for reference.

Position the mitersaw so the mitersaw fence is directly behind the middle fence (Q). Trace the location of the mounting holes in the mitersaw fence onto the middle fence (C). Drill mounting holes, and then fasten the middle fence to the mitersaw fence.

Drill mounting holes, and bolt the saw to the shelf. Attach the adhesive-backed tape measure to the left-hand fence where shown on the drawing at *left*. For easier sliding, rub paraffin on the mating parts of the stop and fence.

Slide the stop assembly onto the fence so the aluminum front and rear plates slide freely in the grooves in the left-hand extension fence. Position the stop so the marked hairline on the acrylic window centers over the beginning (0") on the tape. Tighten the knob to lock the stop on the fence. Using a fine-toothed carbide-tipped blade, cut the end of the stop extension to length.

Now, by moving the stop exactly 6" away from the blade, the hairline marked on the acrylic window will automatically align over the 6" marking on the tape. Should you ever need to adjust the window, loosen the #6 screws slightly, adjust as necessary, and tighten the screws. Remove the stop, and sand or file a slight chamfer on the cut end of the front aluminum plate.

Buying Guide

• **Hardware kit.** 72" adhesive-backed tape measure, knob, ¼" threaded rod 1½" long, ¼ × 1 × 24" aluminum (holes are not drilled or tapped), ⅛ × 1¼ × 1⅞" acrylic, 4–#10 × 3" F.H. machine screws, 3–#10 × 1" F.H. machine screws, 2–#6 × ⅜" roundhead brass wood screws, #6 × ⅝" F.H. wood screw, 3–¼" T-nuts, 2–adjustable nylon floor glides. Kit No. MS2273, $17.75 (US) plus $5 postage. Call for postage outside U.S. Add $3.25 for a 10–24 tap. Puckett Elec., 841 11th St., Des Moines, IA 50309, or call 800/544-4189 or 515/244-4189 to order.

Produced by Marlen Kemmet Project Design: James R. Downing Photographs: Hopkins Associates Illustrations: Kim Downing; Bill Zaun

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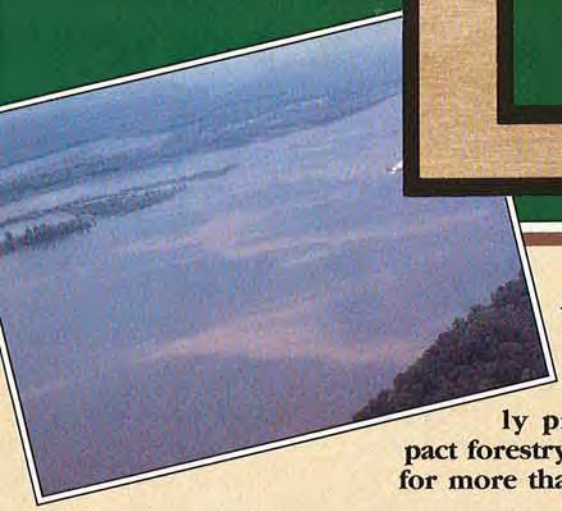

A true tale about how one gentle, lumber-industry giant has quietly practiced low-impact forestry with hardwoods for more than half a century.

WOOD ON THE ROAD

Editor Pete Stephano listens as Tony Parks, Anderson-Tully's vice president of land management, explains how trees left to grow large will straighten out any early bows in the trunk.

The Anderson-Tully Company, a more than century-old lumber producer, has a big reputation among industry insiders. For years, I'd heard that the company's vast hardwood holdings, which stretch along the Mississippi River from Illinois to Louisiana, yield some of the widest, thickest, and clearest hardwood boards found anywhere. And, Anderson-Tully's responsible forestry practices are near legendary.

To find out if this was all true, I contacted Anderson-Tully officials and secured an invitation to their Memphis headquarters. Then, for four days I saw how Anderson-Tully accomplishes everything I'd heard. Now I understand why they have earned a place at the leading edge of ecology-minded timber production.

Peter J. Stephano

Peter J. Stephano
Senior editor

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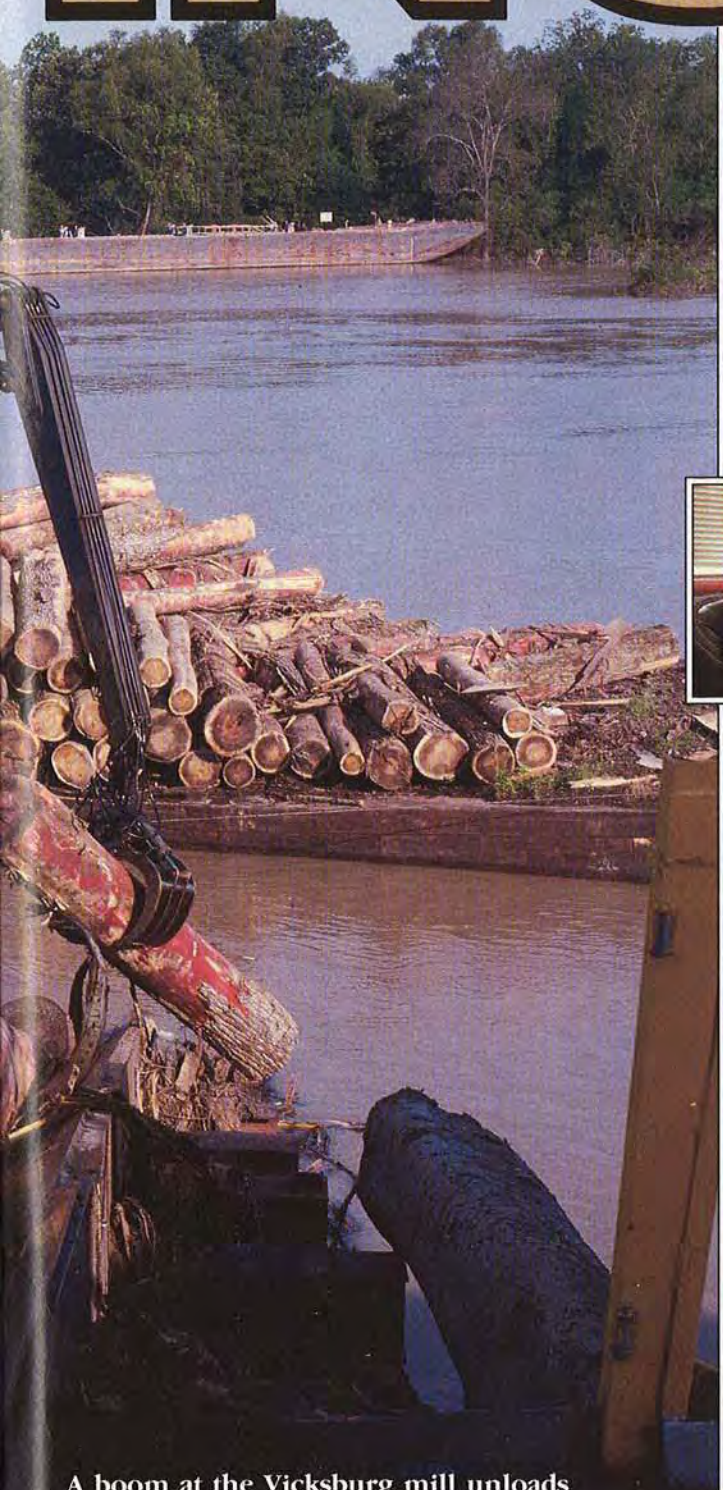
ING ALONG THE MIGHTY MISSISSIPPI



A boom at the Vicksburg mill unloads cottonwood logs. The red color comes from the sap, exposed to the air when the bark slips off.

"In our business, we want the quality that comes from great big trees, not scrawny, skimpy ones," says John M. Tully. He's the 65-year-old president of the Memphis-based Anderson-Tully Company, one of the nation's largest hardwood producers. Raising his hands to emphasize the point, he adds, "But to get great big, quality trees, you gotta get tiny seedlings first."

John Tully's big trees do begin as little bitty ones, but they grow up in a leafy, green neighborhood filled with trees of all ages. In the science of silviculture (tree-growing), that's called uneven-age management, and it calls for an intensive knowledge of the land as well as all the trees that nature puts there.

John Tully began the data-reliant management that guides the company's intensive, uneven-age, forestry practices.

Nature still selects the trees

If you were to fly from St. Louis to New Orleans, at any one particular moment you'd likely see Anderson-Tully-owned timber below. Forester Tony Parks, the company's vice president for land management, tells when and how this vast ownership began.

"Back in 1889, when the company was first established in Memphis, the founders saw a value in the land that others didn't. Most companies would either buy the timber, cut it, then get out; or they would buy the land, cut the timber, then let the land go for back taxes," he says. "Rather than cut out and get out, Anderson-Tully added land all the way down to Vicksburg and maintained the land in its natural condition by buying available timber from outside sources and saving its own." Those century-old decisions, combined with a long-term land and timber management plan (rooted in 1937 and formalized in 1968), have meant a sustainable hardwood supply for the company's mills.

Most Anderson-Tully forest is bottomland, made up of rich soil deposits left by the overflowing Mississippi River. Yet, there are huge upland stands, too. The mix naturally generates 120 tree species.

Continued

LOGGING

"We allow nature to make the species selections, and then we manage what she puts on those sites," explains Tony of the company's nearly hands-off forestry technique. From the mix that nature gives them, Anderson-Tully receives 65 species with commercial value. Of these, 28 go to U.S and foreign markets in the form of processed lumber, while the remaining supply paper pulp, veneer, and other specialty needs.

Around-the-globe marketing

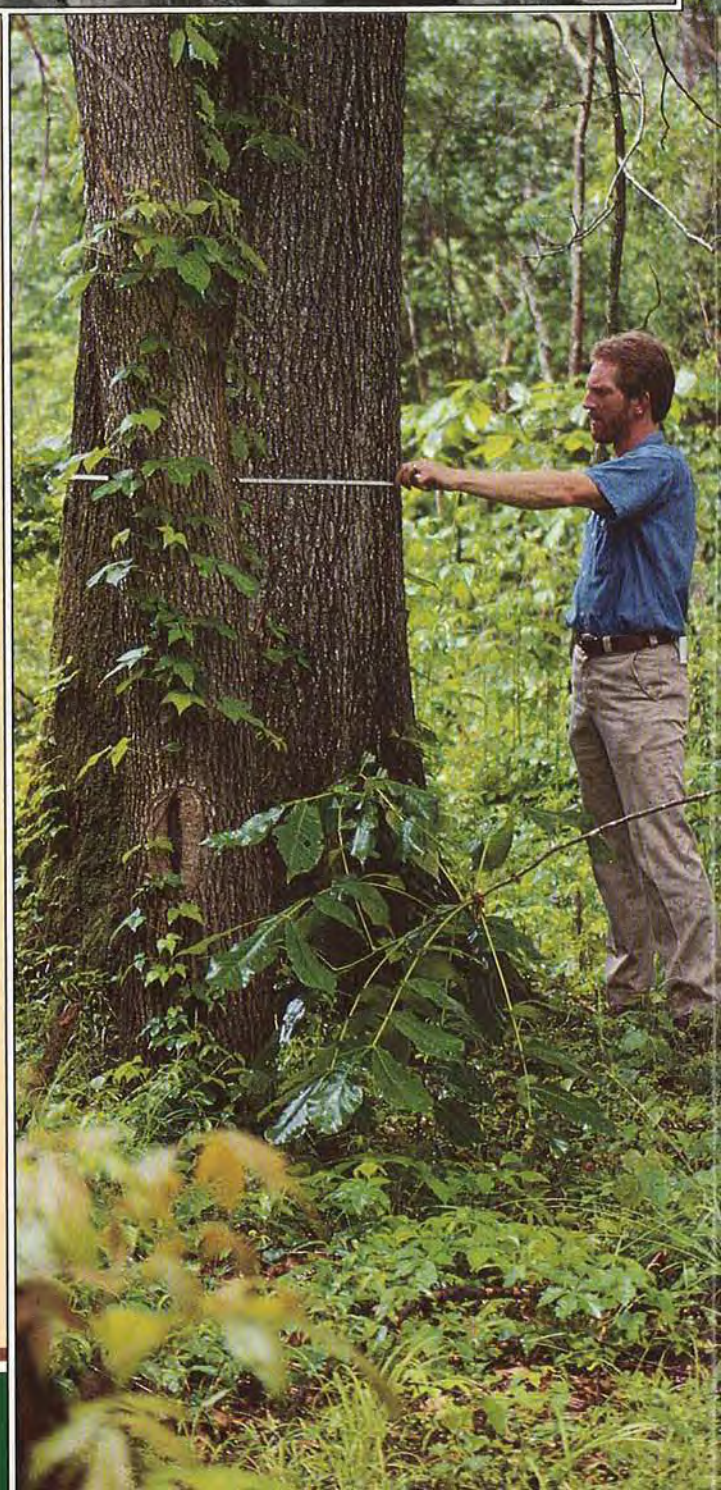
In a typical year, the company cuts from its lands and mills more cottonwood by far than any other species. After that come the oaks, hackberry, sweetgum, sycamore, and ash. The remainder represents a broad spectrum—sweet pecan, locust, Kentucky coffee tree, magnolia, persimmon, elm, sassafras, willow, tuliptree (yellow poplar), and so on.

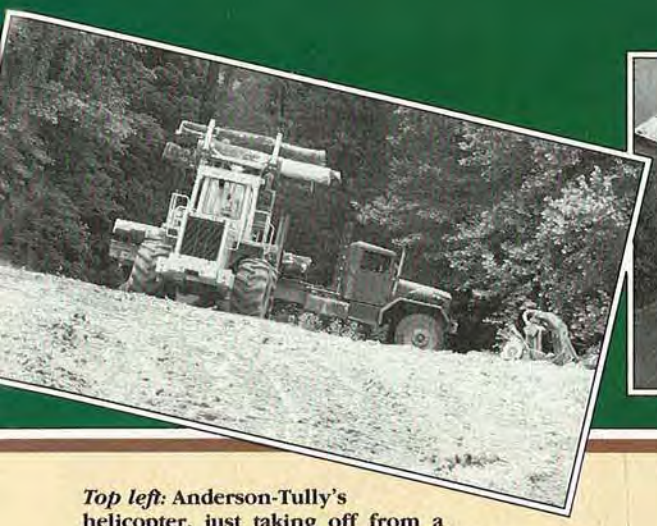
However, under Anderson-Tully's complete forest management plan, the species mix to be cut annually isn't dictated by marketing needs, but by foresters in the field. "What we cut," says Tony, "is based on what we determine we can harvest in each species without exceeding its annual growth."

Marketing the 70 million board feet of such a mix of wood flowing from the forest each year challenges the sales department. "With all the species we have, you can see how important it is to develop markets," says Richard Wilkerson, one of the company's sales representatives. "What makes my job difficult is that those species are coming to the sawmill whether they're selling or not, because we're going to do what's best for the resource."

As a result, sales representatives inventory what's available, and then seek out probable customers. That's why a good portion of Anderson-Tully's cottonwood ends up in Japan, where it's made into door jambs, trim, and furniture. The persimmon also goes to Japan, but it's manufactured into golf-club heads. Texas manufacturers make cottonwood into louvered shutters. Sycamore finds its way into chair manufacturing, and sweetgum gets utilized for paint-grade moldings and other millwork.

Much of the quality ash from the bottomlands is used for furniture and cabinets in the United King-





Top left: **Anderson-Tully's helicopter, just taking off from a log barge, comes in handy for the foresters who manage the company's thousands of acres of timber.**

Top center: **Six-wheel-drive, military-surplus trucks team up with log stackers to haul logs from the bottomland forest to the river landing for loading.**

Top right: **Much of the timber harvested from company lands moves by barge to the mill. A barge such as the one tied up at the derrick boat at Mile Three on the Arkansas River can carry logs totaling 300,000 board feet.**

Left: **In a bottomland stand north of Memphis, forester Jack O'Connell measures the diameter of a cherry-bark red oak. "Most companies would cut this one," he says. "We'll let it add quality along with the quantity."**

dom. Then, of course, there are the shipments of oak, ash, and other cabinet-class woods to U.S. furniture companies such as Bernheardt, Drexel, Henredon, and Thomasville. And about 18–20 million board feet go to homecenters and retail hardwood dealers, eventually ending up in the hands of home woodworkers.

Managing a forest tree by tree

Unlike softwood trees such as Douglas fir or yellow pine that can be mass-planted as seedlings, hardwood trees usually regenerate naturally. When the right conditions exist, a red oak, for instance, emerges from an acorn planted by a squirrel or sprouts from the stump of a felled or fallen tree.

Left alone to mature, the resulting bottomland forest would include shade-tolerant species like beech and boxelder, along with light-loving ones such as green ash, sweetgum, and red and white oak. The individual trees in each species may or may not develop into quality specimens. But, by promoting the best growth over decades through selection-cutting (rather than "selective" cutting, which typically means cutting the best and removing the rest), a forester can manipulate the amount of sunlight that reaches the trees. This encourages the growth of preferred species into high-grade sawlogs.

"Over a 14 year period, we've cut a million board feet from here and we still have 3,000 board feet per acre in condition to grow," says forester Fred Newcomb, standing in the same area shown in the aerial view at top. A century ago, it was cotton fields.

Tramping through a bottomland stand along the Mississippi River, about 60 miles north of Memphis, Anderson-Tully forester Jack O'Connell explains how the concept works. "On any site, we like to have areas that were harvested, trees that are to be harvested, and small trees that will take the place of the large trees. That way, you'll never miss the forest."

Jack manages an extensive piece of the company's timberlands that extends from Cairo, Illinois, to Helena, Arkansas. He speaks with pride as he points to trees in the stand. "That cherry-bark oak there has 1,200–1,300 board feet in it, and it'll yield about 80 percent No. 1 common and better lumber," Jack comments. "Red oak usually brings $225 to $300 per thousand board feet on the stump, but there aren't any quotes for quality like this. It's an example of our management objective." The tree we're looking at would make many a woodworker drool. It's limb-free for 48' and has a 42" diameter at breast height.

"Anybody can grow timber like this on sites like these, if they wait long enough," Jack adds, smiling. "We just try to do it a little quicker."

Ensuring big, quality trees for the future takes planning. And to make that a more manageable task, Anderson-Tully long ago divided its land into four huge blocks, each with a forester in charge. Then, each block is further divided into thousands of 160-acre management units the company calls compartments.

"A 160-acre compartment is the largest unit we feel that we can manage under this system, because it's a real hands-on approach," says Jack. Tony Parks chimes in, "What Jack means is that we manage our forests tree by tree."

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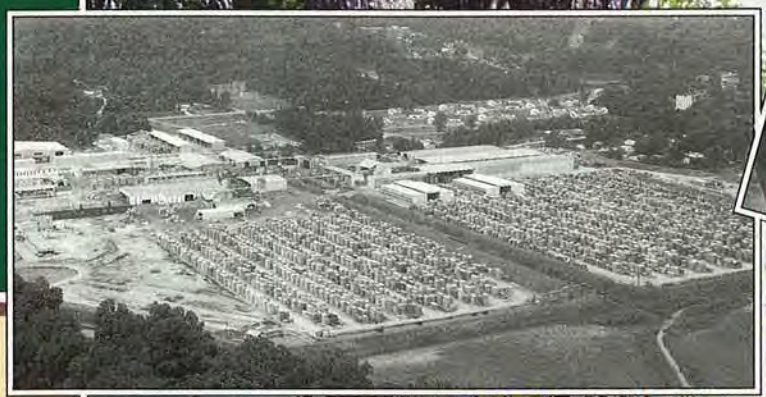
LOGGING



Tree-by-tree management as practiced by Jack and other company foresters actually involves marking every tree to come out of the forest, whether it's for pulpwood or sawlogs. "It's labor intensive, but it's the only way to make sure we are getting what we want in the forest," adds Jack.

"By cutting in any given compartment every 10 years or so," he continues, "we can keep monitoring the open-canopy areas. It's necessary to understand relationships between species and sizes. Here in this stand, for instance, at age 25 years the sweetgum trees would be dominant because they grow faster in the sunlight, but 10 years later, the red oak will start to break through the canopy, eventually passing the sweetgum. What we end up with is red oak with a clearer bole [trunk] because it had to compete."

"Our logs consistently run between 41 and 43 percent U. S. Forest Service No. 1 grade," says Tony Parks. "The average for the whole southeastern hardwood forest is only about 6 percent."

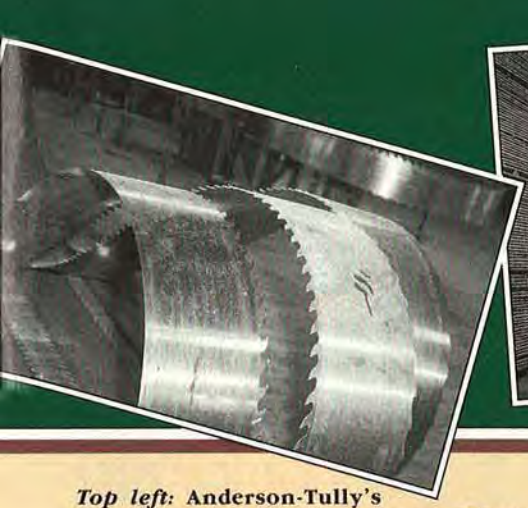
Logging on the river

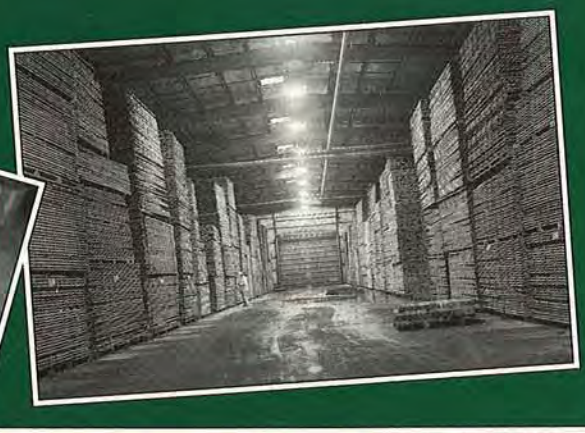
In the old days, transporting logs from the Mississippi River Delta bottomlands involved chaining them together into large rafts, then floating the rafts downstream to the sawmill. Today, logs still come to Anderson-Tully's Vicksburg mill from upstream, but in towboat-escorted convoys of huge barges, each carrying 150,000 to 300,000 board feet per barge.

"About 60 percent of the harvest on company lands comes out to river landings," says Paul Henry, an Anderson-Tully logging superintendent. "But in my block, [Helena, Arkansas, to Greenville, Mississippi], about 98 percent is river logging. And with river transportation, we can deal in volume. We try to take in nine barges per trip because we're often several hundred river miles above the mill."

Paul stands on the derrick boat, a massive, flat-decked, floating platform equipped with a loading boom and combination bunkhouse/kitchen/mess hall for the crew. It's anchored at the log landing on Big Island, a vast forest surrounded by three rivers—the White, the Mississippi, and the Arkansas.

"This island has maybe a hundred 160-acre compartments or more," says Paul, "and 3,000–4,000





Top left: **Anderson-Tully's Vicksburg sawmill operations cover 150 acres, including three sawmills, acres of predrying area, and a large kiln capacity. In the U. S. hardwood industry, it's the largest lumber processing complex of its kind.**

Top center: **Sawing large logs requires bandsaw blades from 12" to 14" wide and 46½' long. Such blades cost as much as $1,200, and are mended and resharpened right in the mill.**

Top right: **One-and-a-third million board feet of sawed hardwood fills the predryer from floor to ceiling three stacks deep per side. Fans keep the air slowly moving through the stickered wood until it's dry enough for the kiln.**

Left: **Uneven-age silviculture manages for wildlife as well as trees. Forester Johnny Lack has several trees per acre like the old pecan he stands by. These snag trees—he calls them pet trees—become nesting areas for birds and dens for mammals, including raccoons and even bears.**

acres that need to be cut this year. We've already cut six barges in the two weeks since we started, and because of wet weather, we got started late."

John D. Ballinger, a logger from Pine Bluff, Arkansas, contracts with Anderson-Tully to harvest timber. He's been logging since 1946, and observes how it is to drop and haul huge Big Island logs of cottonwood, hackberry, and ash.

"The bigger the timber, the less trouble there is with it," John says with the hint of an Arkansas drawl. "It's a lot easier to log and you make more volume. It's not unusual to cut 90,000 board feet a day, hauling logs from three or four miles in the woods. That is, if the weather holds and equipment don't break down."

"In this selection cutting, there's always plenty of timber left," he points out, adjusting the visor of his cap and gazing back over his shoulder at the dense trees. "It don't do a lot of damage, either."

Nodding, Tony Parks says, "We feel that in the future there will continue to be a great demand for wood, but unless you can produce it in an ecologically sensitive manner, you're not going to have a market." Adds Johnny Lack, forester for the block, "We had an ecology professor visit here once. He saw one of our bottomland stands and said, 'This is a virgin forest.' I told him, 'Well, it may be virgin, but seven years ago we cut 11,000 board feet per acre out of here.' " And to John Tully and his successors, that will always be the way of a Delta harvest.

HUNTING CLUBS

Where birds, bear, bucks, and bobcats roam

Club members pose with trophy mounts from last deer season.

According to Jimmy Bullock, one of Anderson-Tully's two wildlife biologists, providing for wildlife is company policy. "In 1984 the company adopted a resource management guide that integrates wildlife, forestry, and logging," notes Jimmy, "and one part says that the deer herd is a resource just like timber, and that it should be monitored and managed to ensure that it's maintained in quality condition, the same as trees.

"One way that's done is with the cooperation of hunting clubs that lease Anderson-Tully timberland. We have 242 clubs, and most are involved in deer management and data collection on herd condition."

Within state laws and the biologists' guidelines, clubs set their own goals for deer, such as more 2½-year-old bucks, then regulate members' hunting accordingly. The result has been a healthy deer herd in balance with the land.

Mike Staten, the company's other wildlife biologist, has a deep interest in songbirds. Their feeding and nesting grounds in wooded areas across North America have shrunk.

"Because of uneven-age management, our forests always have a mixture of tree-top levels, hollow trees to provide nesting areas, and wildlife food, too, such as pokeweed and dewberries. Nontimber trees like mulberry and dogwood contribute to the diversity," he says.

That's why on Anderson-Tully timberlands you'll find all the furry and feathery members of a forest community. "We look at them as supplying a richness to our forest stands," says Mike.

Written by Peter J. Stephano Graphic design: Perry A. McFarlin
Photographs: Mark J. Istvanko; Jimmy Bullock/Anderson-Tully

Print this article

ROUGH 'N' READY WRECKER

Every now and then, even the sturdiest toy vehicle "breaks down" somewhere and needs to go to the "shop" for repairs. When that happens at your house, we've got the truck your child needs to get the hauling job done. For heavy loads, simply have him lock the boom's lift bar in the up position—just like the real McCoy—and off he'll go.

Note: You'll need some thin stock for this project. You can either plane or resaw thicker stock to the sizes in the Bill of Materials.

Laminate the cab

1 Cut a piece of ¾" pine to 2" wide by 12" long for the cab (A).

2 Measuring 1" from each end of the pine stock, mark the location for a 1⅜" dado. Cut the marked dadoes ½" deep where shown on the *top of page 70*.

3 Crosscut the pine into two equal lengths. Mark the windshield location on one piece where shown on the Windshield detail accompanying the Tractor drawing. Align the top of the windshield flush with the top

Continued

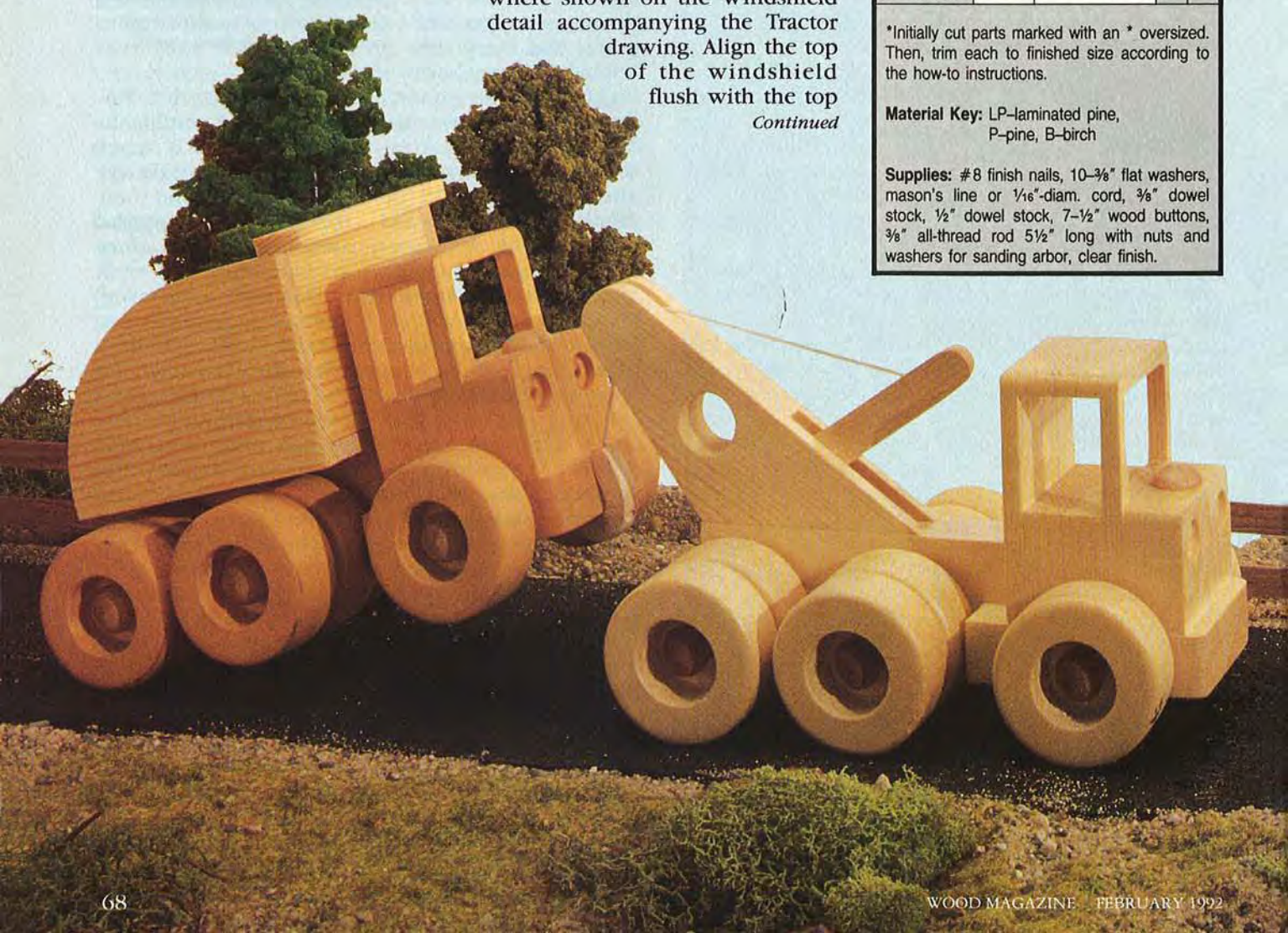
Bill of Materials

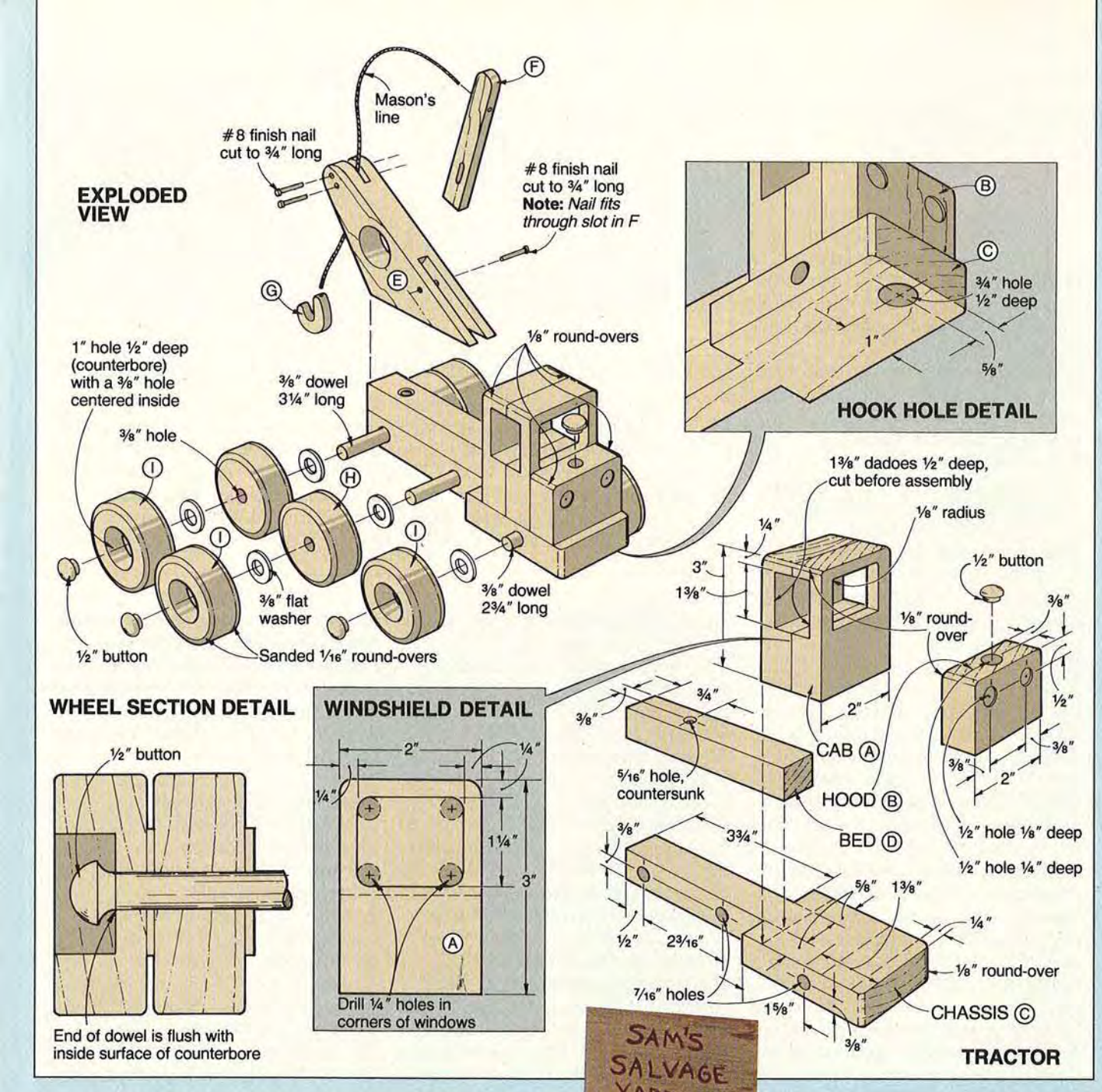
Part	Finished Size T	W	L	Matl.	Qty.
A* cab	1½"	2"	3"	LP	1
B hood	¾"	2"	1½"	P	1
C chassis	¾"	2"	6¾"	P	1
D bed	¾"	¾"	4[illegible]"	P	1
E boom	¾"	1¾"	5⅛"	P	1
F lift bar	¼"	½"	3⅝"	B	1
G hook	¼"	1"	1⅛"	B	1
H* inner wheels	¾"	2" dia.		P	4
I* outer wheels	¾"	2" dia.		P	6

*Initially cut parts marked with an * oversized. Then, trim each to finished size according to the how-to instructions.

Material Key: LP–laminated pine, P–pine, B–birch

Supplies: #8 finish nails, 10–⅜" flat washers, mason's line or 1/16"-diam. cord, ⅜" dowel stock, ½" dowel stock, 7–½" wood buttons, ⅜" all-thread rod 5½" long with nuts and washers for sanding arbor, clear finish.




EXPLODED VIEW
Mason's line
#8 finish nail cut to ¾" long
#8 finish nail cut to ¾" long
Note: Nail fits through slot in F
1" hole ½" deep (counterbore) with a ⅜" hole centered inside
⅜" hole
⅜" dowel 3¼" long
⅛" round-overs
⅜" flat washer
⅜" dowel 2¾" long
½" button
Sanded 1/16" round-overs
¾" hole ½" deep
1"
⅝"
HOOK HOLE DETAIL
1⅜" dadoes ½" deep, cut before assembly
⅛" radius
¼"
3"
1⅜"
2"
CAB (A)
HOOD (B)
BED (D)
½" button
⅜"
⅛" round-over
½"
⅜"
2"
½" hole ⅛" deep
½" hole ¼" deep
¾"
⅜"
5/16" hole, countersunk
⅜"
3¾"
5⅝"
1⅜"
¼"
½"
2 3/16"
⅛" round-over
7/16" holes
1⅝"
CHASSIS (C)
⅜"
TRACTOR
WHEEL SECTION DETAIL
½" button
End of dowel is flush with inside surface of counterbore
WINDSHIELD DETAIL
2"
¼"
¼"
1¼"
3"
A
Drill ¼" holes in corners of windows
SAM'S SALVAGE YARD
1 mile

ROUGH 'N' READY WRECKER

of the dado. Now, drill four ¼" holes inside the marked square. Cut the opening to shape with a scrollsaw or coping saw. Sand or file the edges of the opening.

4 Apply glue to the mating surfaces of cab parts (A), align the dadoes, and clamp. Remove excess glue before it dries.

5 Trim the top and bottom of the cab lamination to length where shown on the Windshield detail.

Now, cut the body parts

1 Cut the hood (B), chassis (C), and bed (D), to the sizes listed in the Bill of Materials. Cut the chassis to the shape shown on the Tractor drawing.

2 Sand ⅛" round-overs on the hood, cab, and chassis where shown on the Tractor drawing.

3 Mark all the hole centerpoints on the hood, chassis, and bed. One at a time, support each piece with a handscrew clamp, and drill the holes (we used a drill press) to the sizes listed on the Tractor drawing. Don't forget to drill a ¾" hole ½" deep on the bottom front of your other toys where shown in the Hook Hole detail accompanying the Exploded View drawing. The hole allows the wrecker hook (G) to fit into it for towing.

4 With the bottom and edges of the cab and hood flush, glue and clamp them together. Recessing the hood ¼" from the front end of the chassis to form the bumper, glue and clamp the cab assembly to the chassis. Later, glue and clamp the bed on top of the chassis and against the back of the cab. Sand smooth, and glue a ½" button into the radiator cap hole.

Add the boom and lift bar

1 From ¾" pine, cut a block 1¾×5⅛" long for the boom (E).

2 Using carbon paper, transfer the boom outline, hole centerpoints, and ⅛" and ¼" slot locations to the boom blank.

GET YOUR ROUGH N'READY TOY PLANS HERE

To date, we've presented plans for the following matching set of toys: (1) semi-trucks and trailers, (2) excavator, (3) bulldozer, (4) dump truck and lowboy, (5) front-end loader, and (6) road grader. If you are interested, send $2 and a #10 business envelope with 55¢ postage for each plan you want, or for all six plans, send $8.95 plus a 7×10" envelope with $1.20 postage to *WOOD*® magazine Toy Plans, P.O. Box 11454, Des Moines, IA 50336-1454.

3 Drill the holes to the sizes stated on the Boom drawing.

4 With a bandsaw, cut the slots to size. (You also could use a push block, and cut the slots on the tablesaw.) Cut the boom to shape.

5 Glue the boom to the bed where shown on the Section View drawing.

6 Using carbon paper and the full-sized patterns, transfer the lift bar (F) and the hook (G) outlines, as well as the hole and slot locations for each to ¼" birch stock. Cut the two parts to shape.

7 Form the slot in the lift bar where marked. Using a handscrew clamp to hold the parts steady, drill a 1/16" hole through the hook and lift bar where marked. Then, drill the ⅛" counterbores. These holes will hide the boom-line knots later.

8 Snip three #8 finish nails to ¾" long. Position the lift bar in the boom slot. Press the top two nails into the 3/32" holes in the boom. (We used a drop of instant glue in each hole to secure the nails.) Align the slot in the lift bar with the lower 3/32" hole in the boom, and press the bottom nail into position, trapping the lift bar in the boom slot.

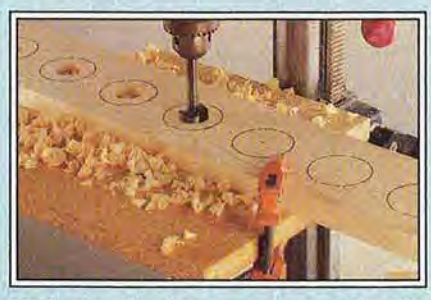
9 Cut a piece of cord (we used mason's line) to about 7" long. Tie a knot on one end and thread the other end through the hole in the lift bar, pulling the knot into the counterbore. Pass the line between the nails in the boom, and thread it through the hole in the hook. Now, tie a knot on this end and tug the line to draw the knot into the hook's ⅛" hole.

Next up, the wheels

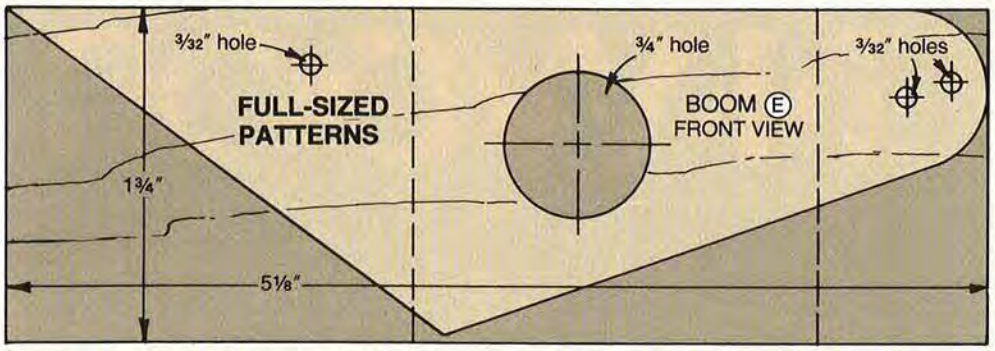
1 To make 10 wheels (H, I), cut a piece of ¾"-thick pine to 4×36". Starting 3" from one end, mark 10 centerpoints 3" apart.

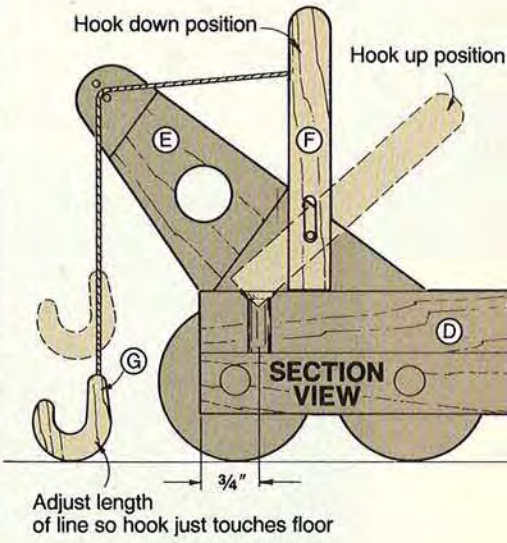
2 With a compass, mark a 2"-diameter circle (1" radius) at each marked centerpoint.

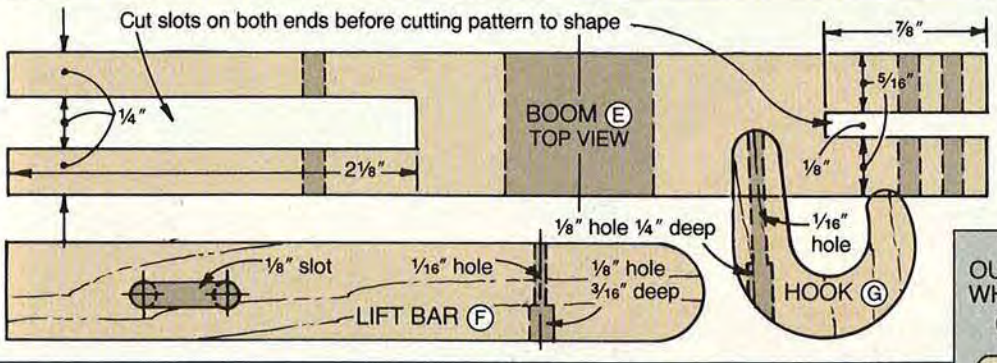
3 Chuck a 1" Forstner bit into your drill press. Attach a scrap work surface to your drill-press table. As shown in the photo *below*, center the bit over a marked centerpoint, and bore a ½"-deep hole in six of the marked circles. (We used the stop on our drill press to ensure a uniform depth.)

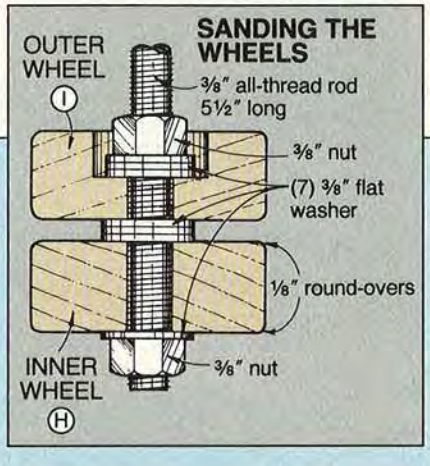


Mark the wheel centerpoints and radii, and use a 1" Forstner bit to drill holes ½" deep for each wheel.

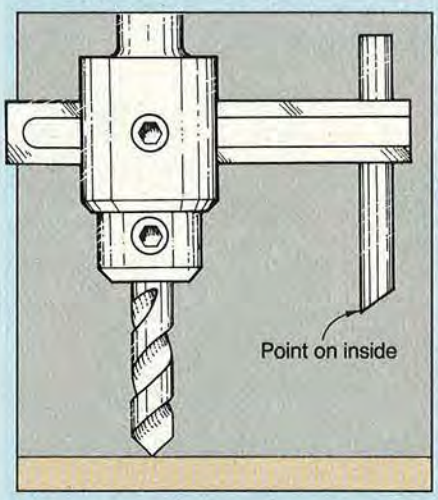






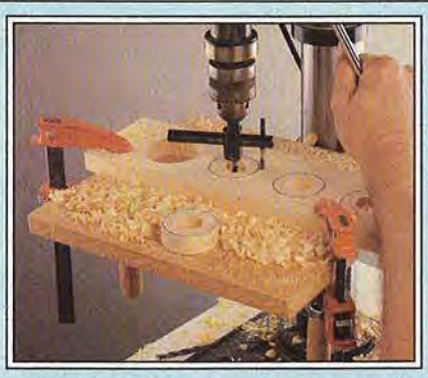


4 Chuck a circle cutter into your drill press. Using the drawing *below* for reference, turn the cutter blade so the pointed end is on the inside to cut a perfect wheel. Adjust the circle-cutter arm to cut the correct diameter.



5 Raise the cutter blade 5/8" higher than the bottom of the pilot bit. Center the pilot bit over the depression left by the Forstner bit in each 1" hole or over the marked centerpoint on the four marked circles, and slowly cut the 10 wheels to shape as shown in the photo *above right.*

6 Remove the circle cutter, and chuck a 3/8" twist drill bit into your drill press. Secure a wheel in a small handscrew clamp, and enlarge the 1/4" pilot hole to 3/8". Repeat for each wheel.



Center the circle-cutter pilot bit over the Forstner-bit depression, and cut the outside of the wheels to shape.

7 Cut a piece of 3/8" all-thread rod to 5 1/2" long, and chuck it into your drill press. Then, using nuts and washers, attach a pair of wheels to the work arbor where shown in the drawing *above right.* With the drill press running at about 750 rpm, hand-sand a 1/8" round-over on the wheels where shown on the drawing. (We found sanding the round-overs safer and easier than trying to rout them on a router table.)

Mount the wheels

1 Cut two 3/8" axles to 3 1/4" long and one to 2 3/4" long.

2 Glue one wheel onto each dowel axle so the end of the dowel is flush with the inside of the counterbore where shown on the Wheel Section detail. After the glue dries, place 3/8" flat washers on the axles next to the glued wheels. Slide the front axle through the front-axle hole, and add a washer onto the protruding axle end. Glue on the remaining wheel, leaving enough free play so the wheels turn easily. Repeat the process with the back axles, adding an inside wheel and washer on each side of the chassis.

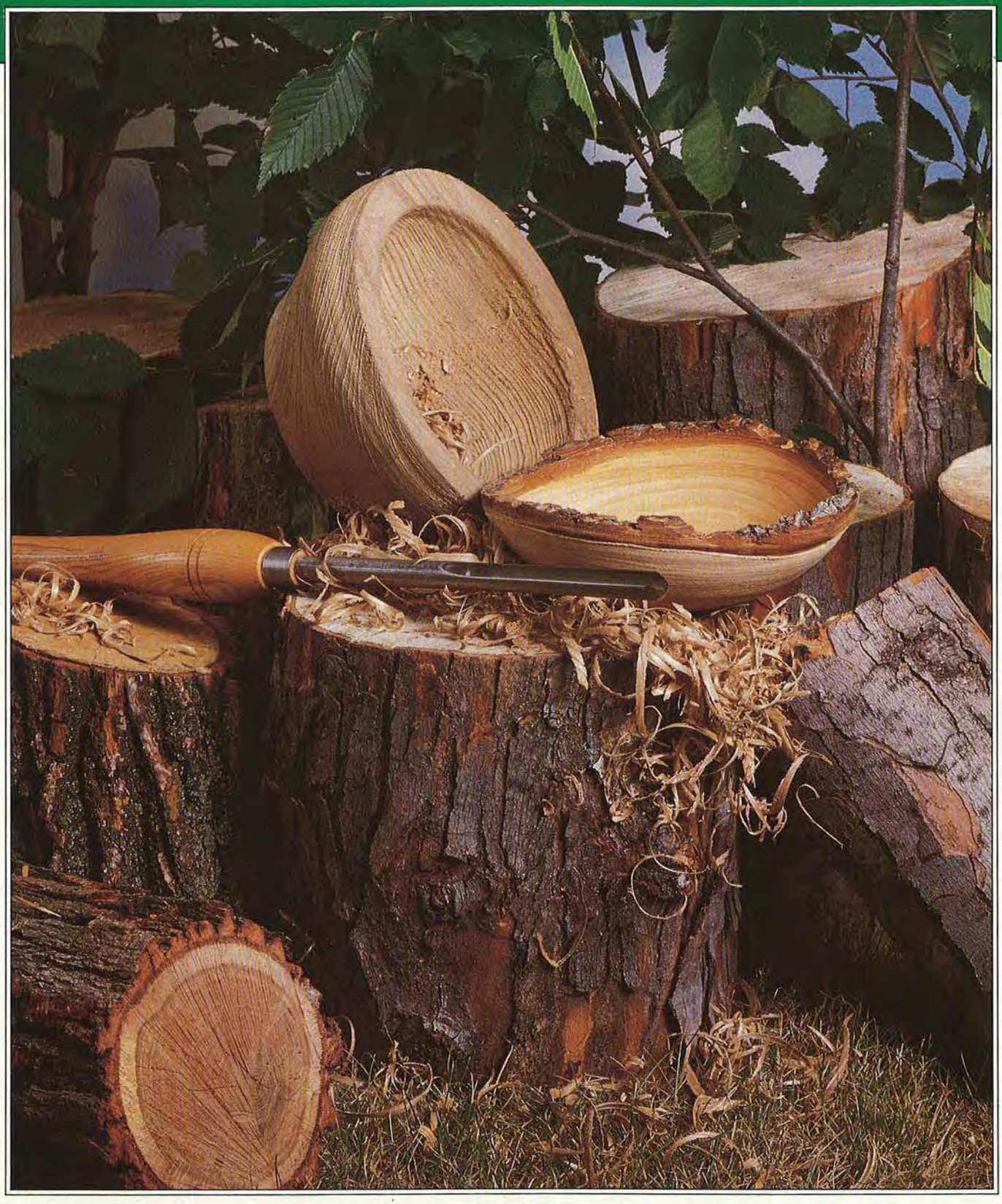
3 To add the hub caps, set the wrecker on its side. Place a drop of glue on the ends of the axle dowels, and glue a 1/2" button on the end of the dowel. After the glue dries, flip over the assembly and repeat for the other hub caps.

4 Apply a clear finish to all the parts (for a durable finish, we used polyurethane).

END

Produced by Marlen Kemmet
Project Design: James R. Downing
Photographs: Wm. Hopkins
Illustrations: Kim Downing; Bill Zaun

GREEN-WOOD



TURNING

A hands-on guide to a fresh experience

Print this article

Woodworkers usually avoid working with green wood. When it comes to turning, though, lots of people actually prefer it. You may join that crowd after you find out how easy and satisfying green-wood turning can be. We've gathered some pointers to help you get started. Once you start, the absolute pleasure of it will keep you going.

If you think of woodturning as a grit-your-teeth showdown against a hard, unyielding chunk of wood, it's time to turn green. Green wood, that is.

When *WOOD*® magazine Senior Editor Pete Stephano had to have a large catalpa tree in his yard cut down a while back, we had a chance to practice with a couple of the logs. We marveled at the almost magical power our lathe and turning tools seemed to have in the freshly cut wood. Give it a try, yourself. You'll find such sheer pleasure in turning green wood that you may figure that's the only reason to do it.

You'll soon discover it's not. For instance, you'll find green wood readily available, maybe as close as your backyard. When you buy it, green wood often sells for less than seasoned or kiln-dried wood. Sometimes it's free.

You can't beat it for workability, either. Tools practically glide through green wood. And, they hold their edges longer, too. You'll spend more time turning and less time sharpening after you join the Green Revolution.

Actually, green-wood turning shouldn't be called a revolution; it goes back to the very roots of turning. Before motor-driven lathes and high-quality steel tools, woodworkers turned green wood out of necessity. They simply did not have the power or the tools to turn hard, dried wood.

Gather some green wood

Tree surgeons and landscaping firms, firewood dealers, contractors clearing land, broken branches in your backyard—all are potential sources of green logs or limbs. (See "How to Transform Found Wood into Usable Stock," *WOOD* magazine, September 1990, for information on harvesting your own wood.) Many specialty wood dealers sell green-wood blanks for turning, also.

But, won't it warp?

You probably have one main concern about turning green wood. You're afraid that you'll invest time and effort in turning a terrific bowl that will just end up warping, aren't you? In fact, that's exactly what's going to happen.

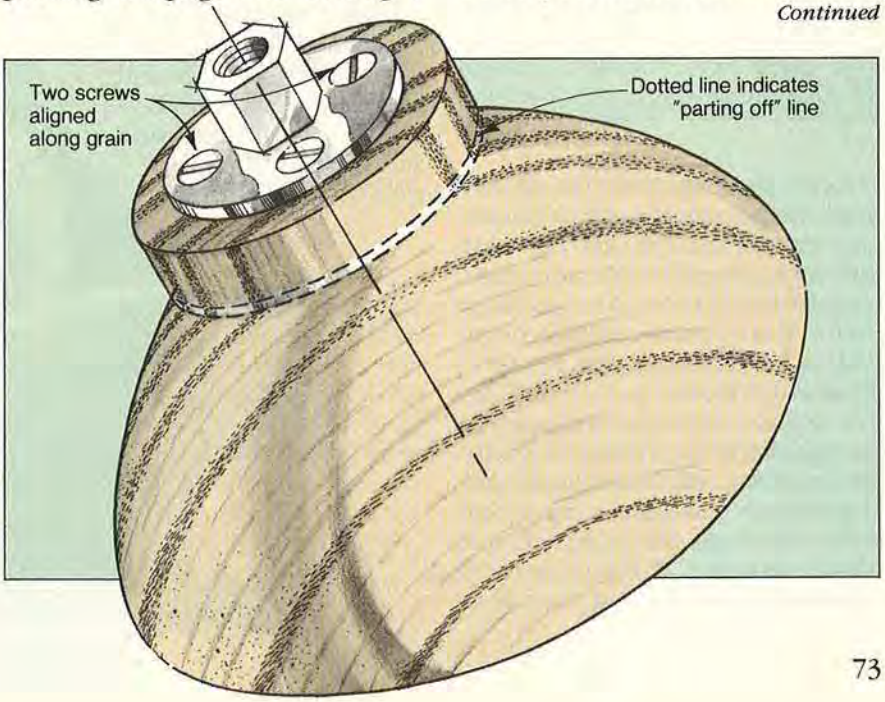
The secret to success lies in expecting warpage and having a plan for dealing with it. You have two choices. First, you can rough-turn a thick-walled bowl, let it season (and warp), and then finish-turn it months later to end up with a round bowl. Or, you can turn a finished form with thinner walls. As it seasons, warpage will become another element of the bowl's design.

Seven tips to start with

No matter which approach you want to try, here are some tips to get you started.

- Use a small faceplate, one about 3" in diameter. Attach it to the bowl-bottom side of the blank so that you can turn the inside and outside in one mounting.
- Screw the lathe faceplate to the bandsawed blank. Although many turners mount dried blanks with adhesives, *don't count on glue or tape for mounting green wood.* Joint failure could injure you or others in your shop.
- Make sure you align two of the screws along the grain. Those two will serve as index marks for a bowl you'll remount to finish.

Continued



GREEN-WOOD TURNING

• Stand outside the firing zone when you start the lathe. That's always a good safety rule, but with green wood, it may keep you drier, too. Your spinning blank can sling off a surprising quantity of moisture (and maybe a few insects). The amount of slung sap depends on the kind of wood you're turning and its freshness.

• Keep your tools sharp. Don't think that because green wood cuts easily you can get by with dull tools. They'll bend the resilient fibers rather than cutting them. Your bowl-turning gouge will suffice for the green bowl.

• Turn the inside and outside in one session. If you're roughing out a bowl to be finish-turned after seasoning, establish the general shape at this stage. Leave the wall thickness about 1/10 of the bowl's diameter. If you're turning a finished bowl, turn to your usual wall thickness, but leave a little extra material on the base or foot.

• Strive for uniform wall thickness to promote even moisture loss during seasoning. This minimizes cracking.

Some tips for seasoning your bowl

If you rough-turned your bowl to finish later, here are some seasoning tips. Skip down to the bottom tip if you turned a finished form.

• Unscrew the turning from the faceplate. Apply a sealer such as paste wax to moderate moisture loss and prevent checking and cracking. Store the bowl away from air movements and extreme temperature variations until it's ready to re-turn.

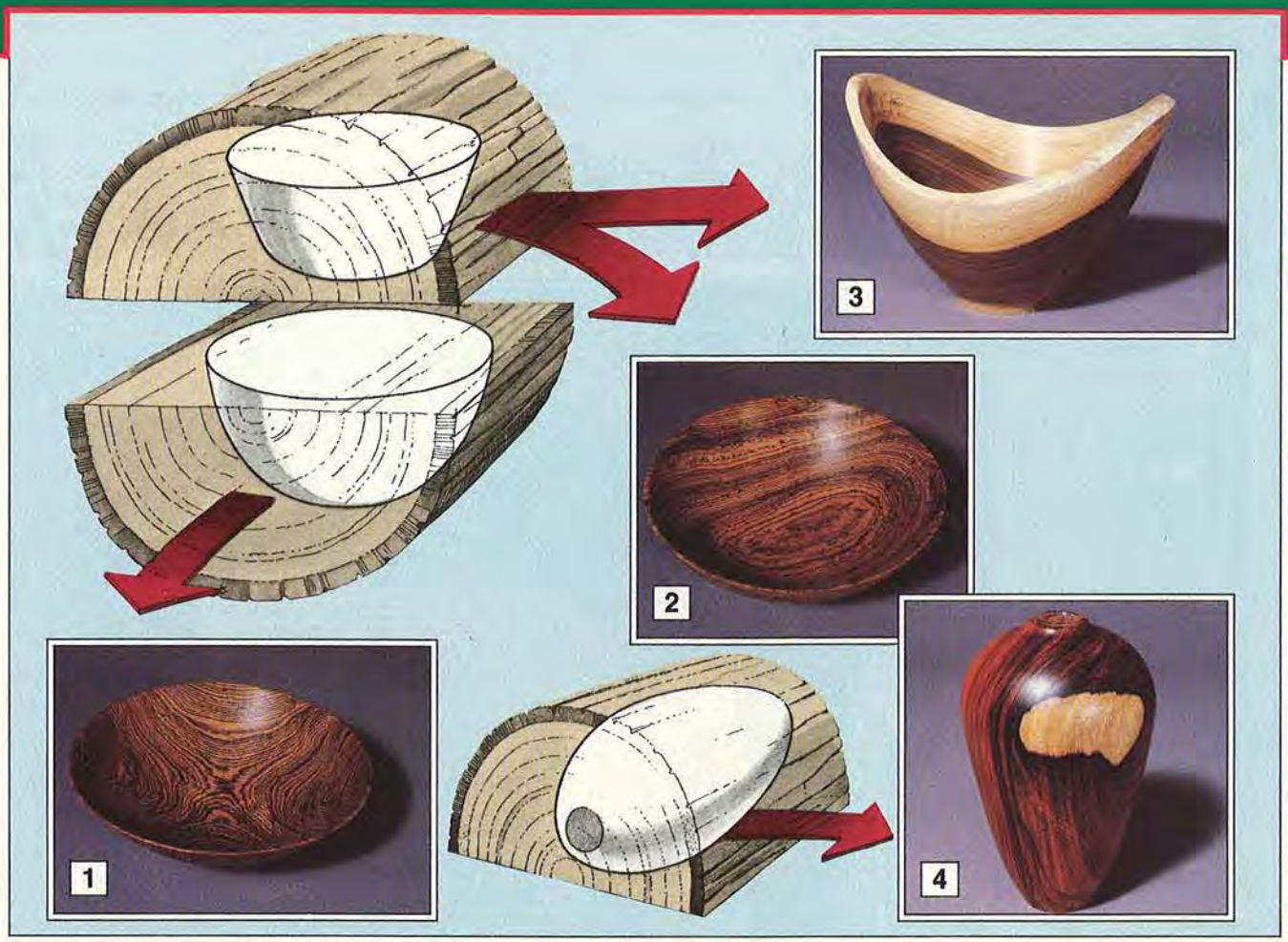
• Check the bowl daily for the first week or so. Cracking or checking indicates that the wood is drying too quickly; apply more wax or sealer. If you live in a dry climate, put the bowl inside a plastic bag, too. Your bowl will be ready for finish-turning in about three months.

• Monitor the seasoning more accurately with a scale indicating grams or fractions of an ounce, if you want to be precise. Record the date and bowl weight when seasoning starts. Then, weigh it periodically and note the readings. When the weight remains stable for several days, complete the bowl.

• Rejoin the bowl and faceplate after seasoning. Drive screws into the existing holes along the grain and redrill the others. Now, with your gouge and scrapers, bring the turning into round again. Complete the shape, sand, and finish as you would any bowl.

• If you turned a finished bowl in the first session, sand it with progressively finer sandpaper while still on the lathe. Since you won't be re-turning it, this will be your last chance to put a fine surface on it. Many woods polish up nicely when green. Remove the bowl from the faceplate and set it aside in a draft-free spot to season.

Watch for checking and cracking as above, though the thinner, more flexible wall section of the finished form won't be so likely to crack. After it seasons about three months, sand the bottom flat, and then finish your one-of-a-kind bowl as you prefer.



Lots of choices for displaying grain

While green wood is a natural for turning bark-edged bowls, that's not your only choice. Depending on the wood, just flipping the blank over could result in a much more dramatic turning; it's all in knowing how the turning's position in your chunk of wood affects grain display.

In any position, color variations between heartwood and sapwood provide one design aspect. Consider cracks, isolated discolorations, or figure in the wood, also. Do you want to minimize their impact or highlight them as effective design elements?

The accompanying illustration, adapted from Arizona turner Todd Hoyer's study "Wood and its relationship to the turned object," shows turned vessels placed in the log different ways. The corresponding photos show the resulting grain pattern for each turning.

Heartwood for the rim

An open bowl with the rim at the heartwood side of a halved log brings out the familiar saddle-shaped grain pattern in *Photo 1.* This placement yields the largest possible bowl from a given log.

Changing the bowl shape changes the grain display with this positioning. Instead of flaring the bowl rim outward, turn it inward; you'll see two bull's-eyes opposite each other with saddles between them.

Heartwood for the base

To bring out the parallel-ring pattern shown in *Photo 2,* orient your bowl with the base at the heartwood side of your blank. You'll turn natural-edge bowls as in *Photo 3* or those with bark edges with this placement, too.

Log size influences the shape of the rings that you'll end up with. They'll fall into an oval pattern when you turn a small-diameter log. But, you'll develop a round pattern (or more nearly so, anyway) in a bowl from a larger one.

Try varying the relationship between log diameter and bowl size for different effects. Bowl shape, however, doesn't alter grain display when you locate the base in the heartwood.

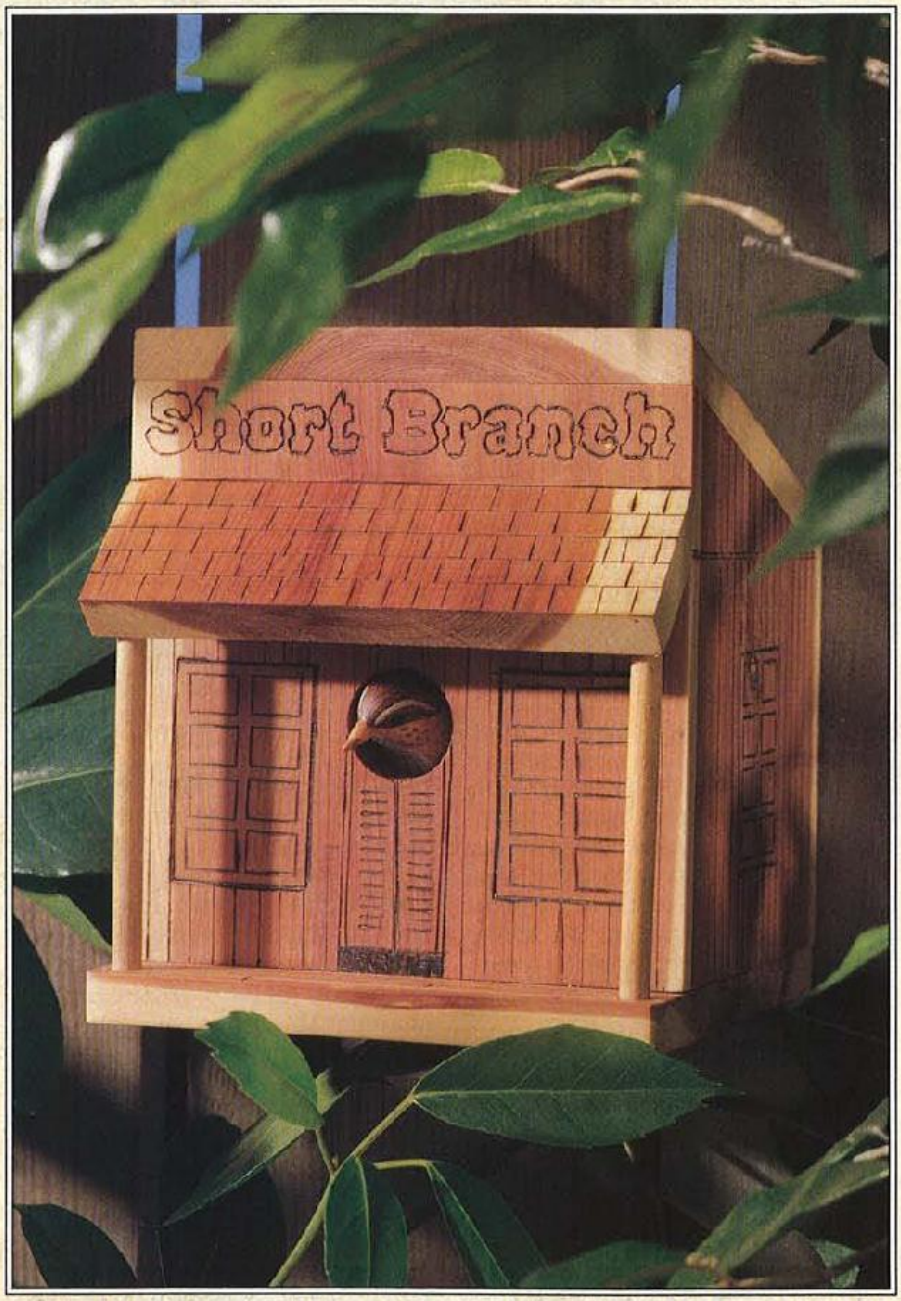
Yearn to turn an urn?

An urn or vase will display continuous parallel rings around the outside whether the top is at the heart side or bark side. Shape won't alter it, either.

Want a light sapwood highlight on one side at the widest diameter, as shown in *Photo 4*? Just locate your vase or bowl along the log's axis (end grain at top and bottom), but offset it toward the outside of the log.

Written by Larry Johnston with Gary Zeff and Todd Hoyer Illustrations: Todd Hoyer; Jim Stevenson Photographs: Gary Zeff; John Hetherington

Short Branch



With the birds' winter trip south nearly over, it won't be long before they're back in town looking for lodging. To get ready for them, mosey down to your workshop right now to build this frontier-style saloon.

Print this article

Note: Sized for wrens, this decorator birdhouse includes ventilation and drain holes, and a bottom that comes off for cleaning. Hang or mount it 6-10' above the ground. If you mount it with the back against a solid surface, drill two ⅜" vent holes near the top of each side wall.

Plane or resaw a 6×39" piece of cedar to ½" thick. You'll need a ¼" dowel 9" long, too. Cut the pieces for the Short Branch with

Saloon It's for the birds

your tablesaw, following the Cutting diagram, *below right.*

Rout a ½" rabbet ¼" deep on each inside edge of the front and back walls where shown on the Exploded View drawing. Temporarily assemble the front, back, and sides. With the bottoms even, mark each side wall at the front and back wall top corners. Disassemble, draw a line between the points on each side wall, and cut the angled tops. Drill the 1⅛" hole in the front wall.

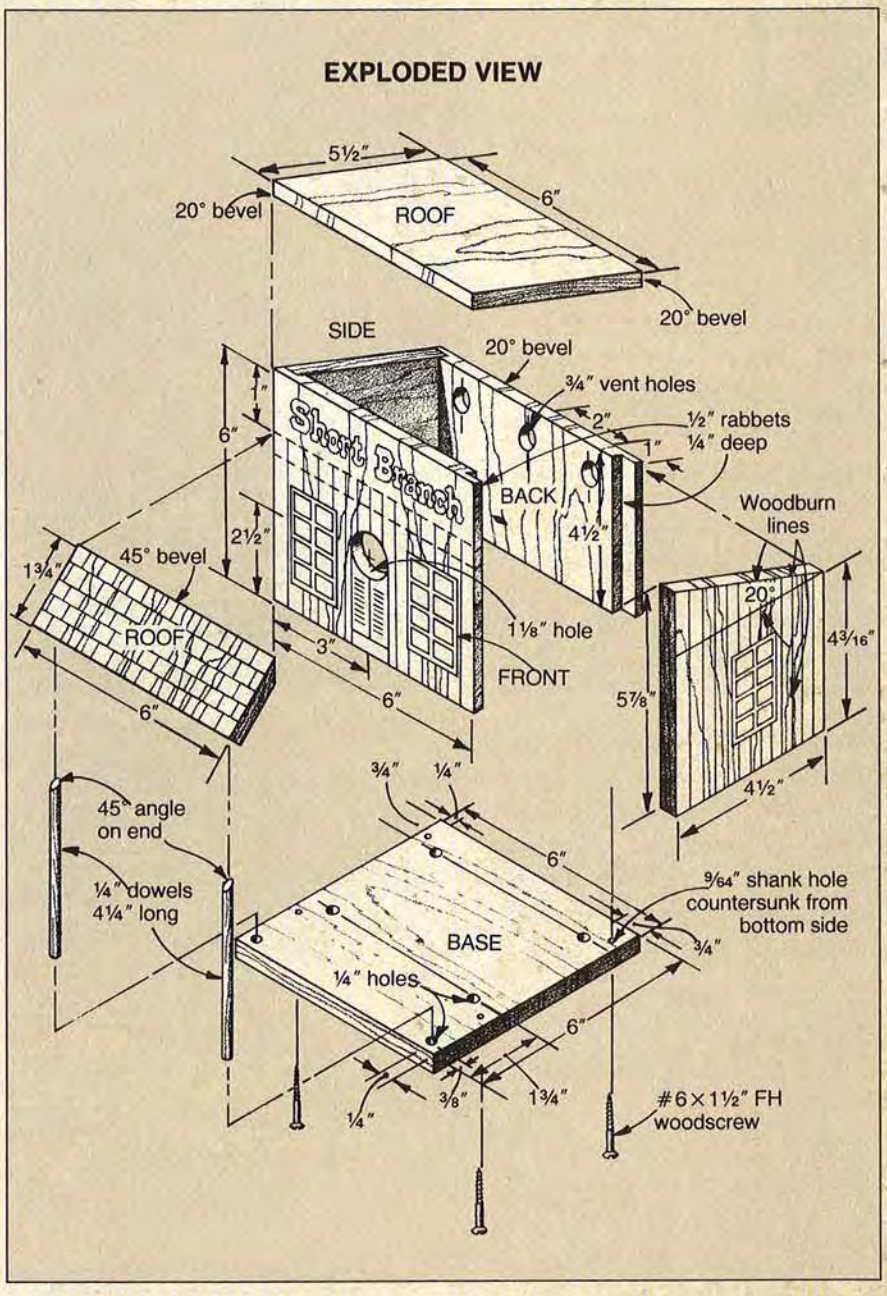
Now, draw the swinging door (see photograph) for woodburning. Draw the two lines at each side of the door about 1/16" apart. Space the horizontal louvers ⅛" apart. Draw 1½×2¼" rectangles for the windows, dividing them into eight panes with ⅛" spacing. Place them ¾" from the bottom, ½" in from each edge on front and centered on each side.

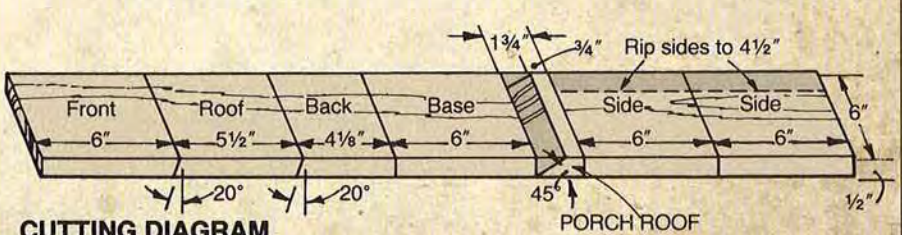
Using our headline for your full-sized pattern, woodburn the sign. Then, add parallel vertical lines about ¼" apart on the front, back, and sides (except around the lettering). Woodburn floorboards on the porch and shingles on the porch roof.

Drill ¼" dowel holes and drain holes through the base and ¾" vent holes through the back wall where shown. Cut two ¼" dowels 4¼" long and sand a 45° angle on one end of each.

Now, glue the four walls, roof, and porch roof together. Attach the bottom with screws, but no glue. Insert the dowels from the bottom, pushing them up to meet the porch roof. Glue them to the base, but not to the porch roof, and then cut them off flush with the bottom of the base.

Apply a clear, outdoor finish (we used Thompson's Water Seal) before opening the Short Branch for business.





CUTTING DIAGRAM

Project Design: James R. Downing Photograph: Hopkins Associates Illustrations: Jamie Downing; Jim Stevenson

A scrollsaw pattern with heart

BE MINE, VALENTINE

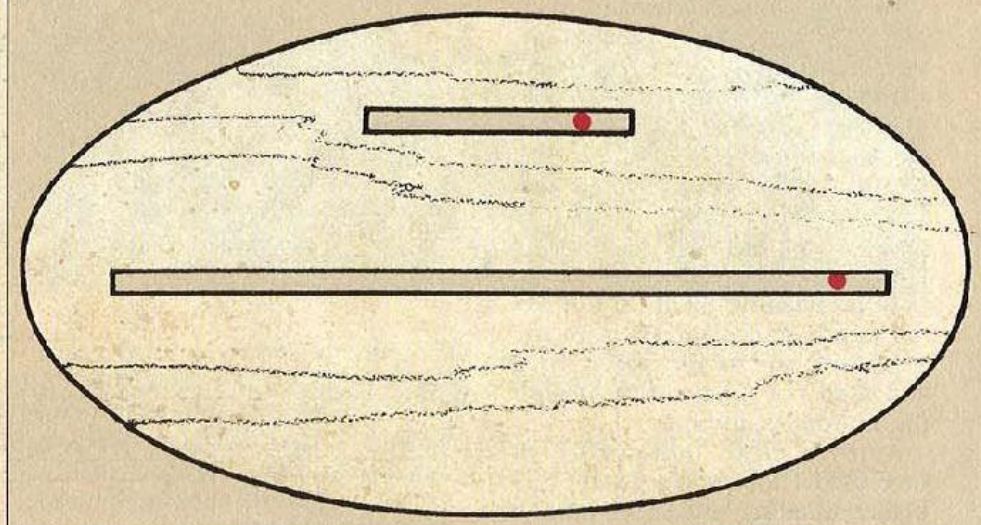
Many of you have told us that the scrollsaw is your first love in woodworking. Here's a heartfelt offering for Valentine's Day combining your first love with a scene of another one.

Print this article

FULL-SIZED PATTERNS

Red dots indicate locations for drilling 1/16" blade start holes

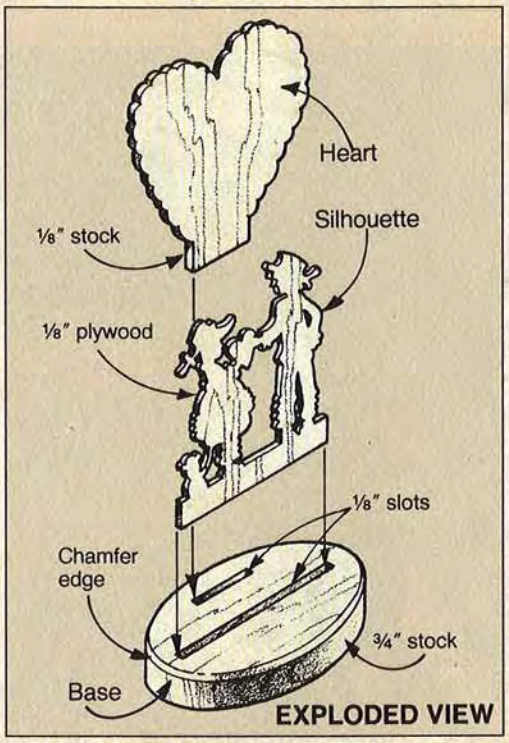
Base



Note: *You'll need ⅛"-thick hardwood or plywood for the heart and silhouette and ¾" hardwood for the base. Also, since the silhouette has some tight corners and small cuts, select a fine, plain-end blade for your scrollsaw. (We used a #5 blade, .037×.015", with 14 teeth per inch.)*

Cut two 4½"-square pieces of ⅛" solid stock or plywood. (We used Baltic birch plywood and solid purpleheart.) Also cut a 3×5" piece of ¾"-thick hardwood for the base. (We selected oak.)

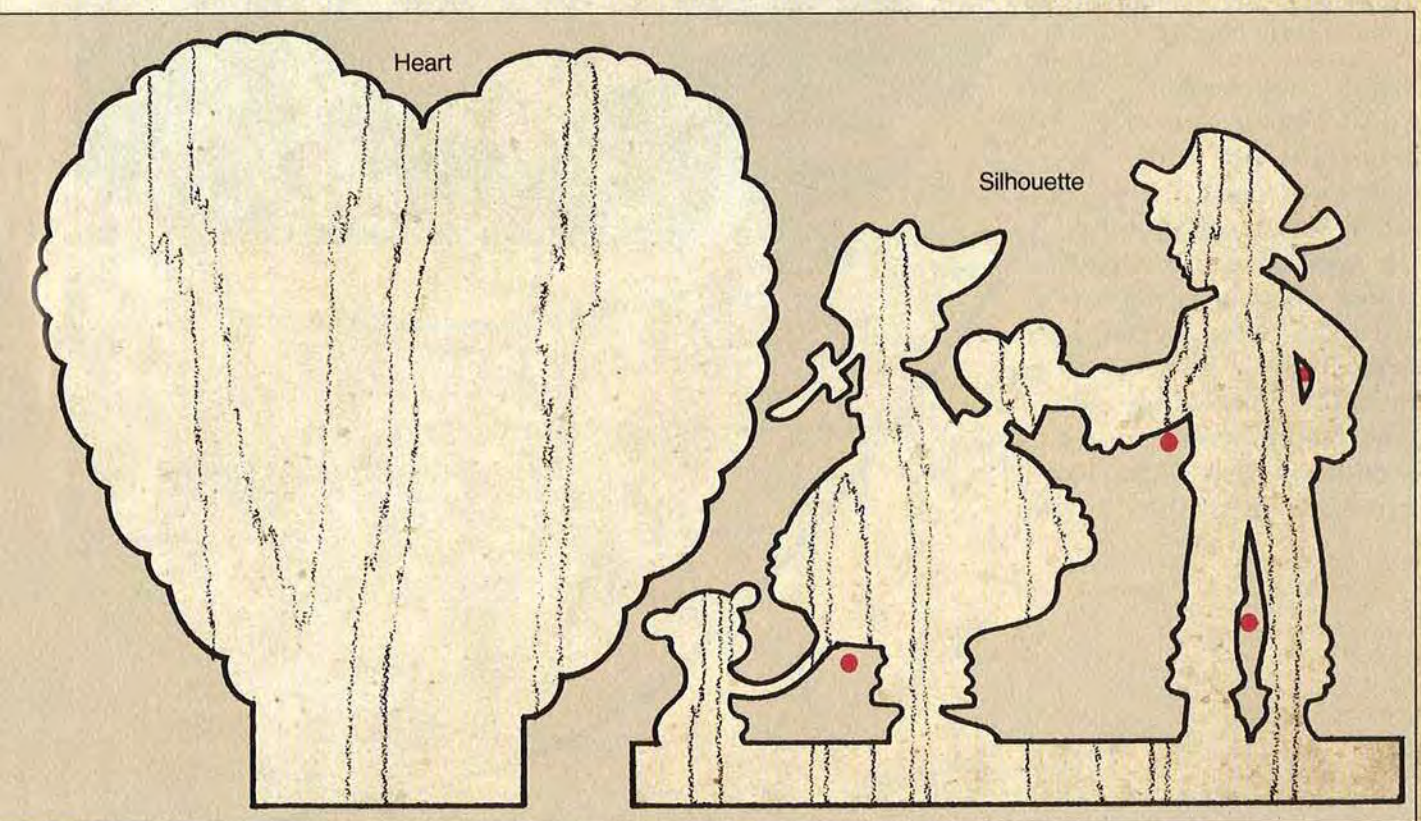
Photocopy the full-sized patterns *below* for the silhouette, heart, and base. Separate them and affix them to the appropriate stock with spray adhesive or rubber cement. (We applied the silhouette pattern to the plywood and the heart to the purpleheart stock.)



Drill 1/16" blade start holes where indicated on the silhouette pattern. Then, begin scrollsawing with the inside cuts. Complete the silhouette by cutting around the outside line, taking care with small details such as the children's noses or the girl's pigtail. Next, cut out the heart.

Drill 1/16" blade start holes for the two slots in the base where shown on the pattern. Cut out the slots with your scrollsaw, and then saw around the oval outline and sand. For an extra touch, rout a chamfer around the base top.

Apply a clear finish to the base, silhouette, and heart. Place the cutouts into the base slots where shown, and then deliver to your sweetheart.

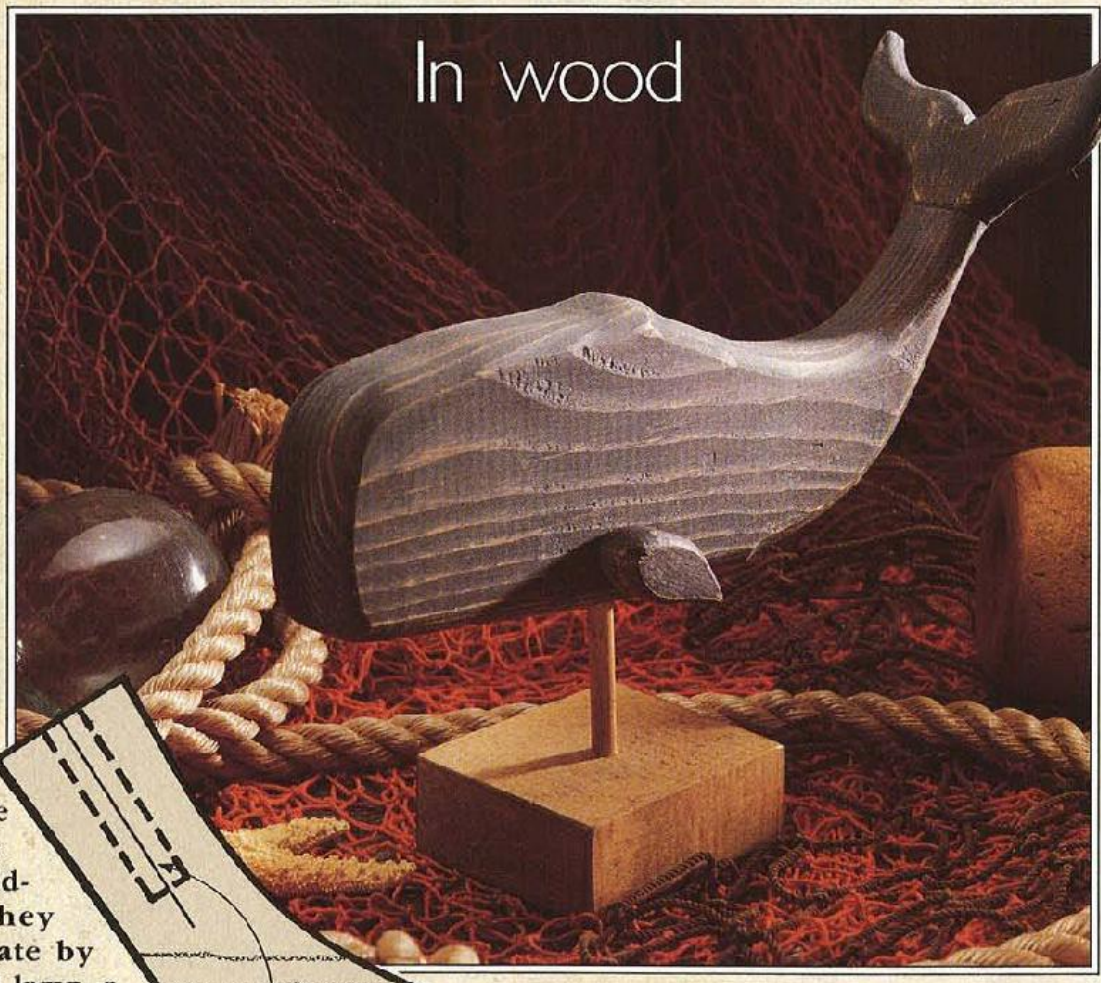


Project Design: Media Enterprises, John Lemieux Rose Photograph: Hopkins Associates Illustrations: Jamie Downing; Jim Stevenson

CRAFT SHOP

SAVE A WHALE

In wood



When they spoke of burning the midnight oil, old-timers meant they were working late by the light of an oil lamp, a lamp that might have burned whale oil. But, you won't have to burn much oil to make this whale. And, after you're done, you'll have a nautical decoration that looks like it came from the age of the oil lamp.

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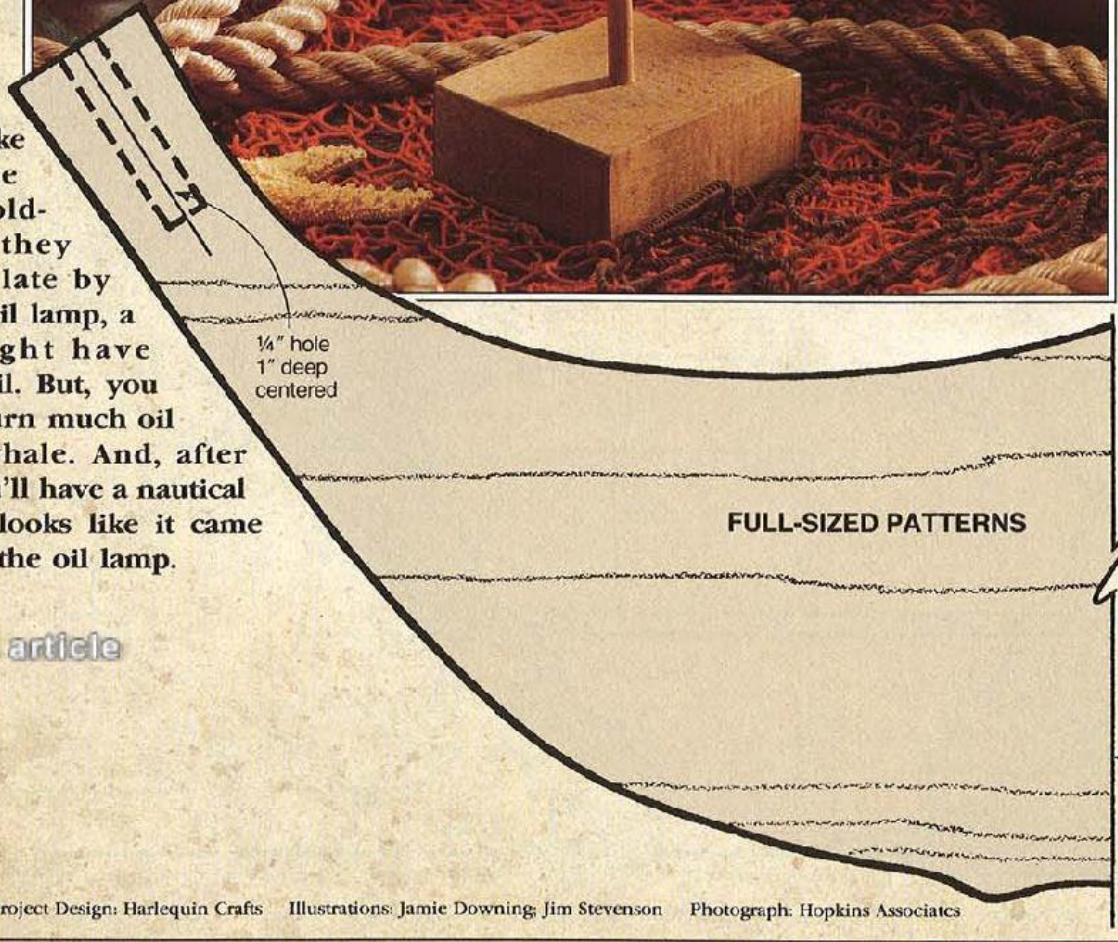


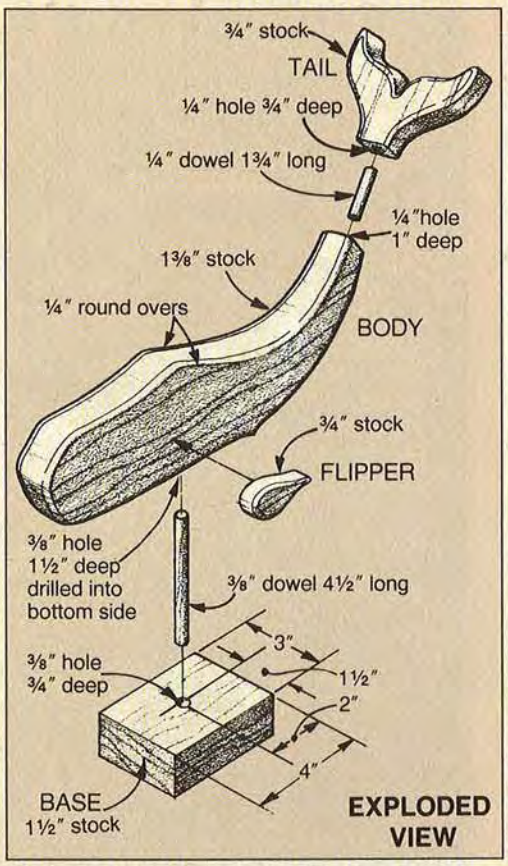
Project Design: Harlequin Crafts Illustrations: Jamie Downing; Jim Stevenson Photograph: Hopkins Associates

Fashion your whale

***You'll need** pine, fir, or cedar to make your whale—one piece 1½×4½×13½" (a piece of 2×6 works well) for the body, one ¾×5×6" for the tail and flippers, and one 1½×3×4" for the base.*

Photocopy the full-sized patterns *below*, and transfer them to your stock. Because you need two flippers, it's easiest to stack-cut these pieces using just one pattern. Now, cut out the body, tail, and flippers with your scrollsaw or bandsaw.

Drill the ⅜" hole 1½" deep where shown on the body pattern. To do this, place a doweling jig on the body loosely, and then insert a short dowel in place of the drill bit. Align the dowel with the 6° angle reference line on the pattern, and then tighten the jig. Bore the hole with a brad-point bit. (We held the workpiece on the bench with a wooden hand-screw clamp while drilling.)

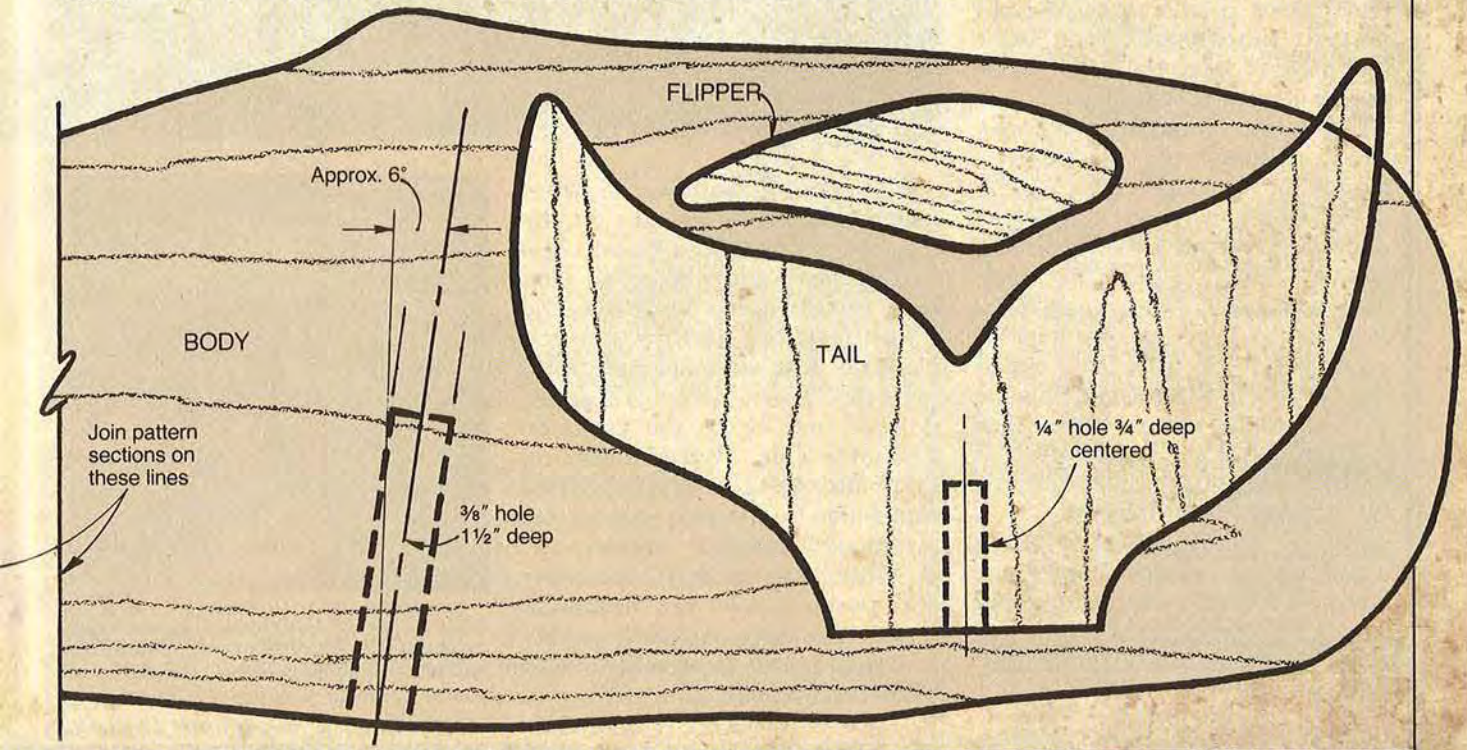


Refer to the Exploded View drawing, and then drill the ⅜" hole ¾" deep in the base using a drill press or drill guide to keep the hole vertical. Next, drill the ¼" dowel holes where shown on the body and tail.

Rout edges where shown with a piloted ¼" round-over bit in a table-mounted router. Temporarily attach the flippers to scrapwood with double-stick tape or hotmelt glue to keep your fingers farther away from the bit when routing.

Join the tail to the body with a dowel and glue. Sand all parts. Then, glue the flippers to the body where shown. Glue a ⅜" dowel 4½" long into the hole in the base.

Finish the base and dowel with maple stain. Paint the whale dark gray, and scuff with 150-grit sandpaper when dry to expose some of the wood grain. Finally, glue the whale to the base dowel.



GET READY... GET (T.V.) SET...

Here's the scenario. You've got an old television console or entertainment center sitting in your family room. And even though the original television has long since gone on the blink, the unit simply looks too good to throw out. If you're like me, you've probably put a portable TV on top of it, and possibly a VCR on that.

There is a better way, folks. Read on and I'll share with you what we did with my now-recycled pecan console, the one posing with me *right.*

Larry Clayton

Larry Clayton, Editor

Here's how to prepare the console cavity

1 Start by unplugging your set, removing the back panel from the console, and making a visual survey of what's got to come out. Once that's done, call in a qualified service person to remove the picture tube. Why? Even units that haven't been used for some time can pose a severe shock hazard, so don't take any chances. Next, unscrew the plastic trim around the opening.

2 Measure and record the height, width, and depth of the opening you've created. With this information in hand, select a television that fits the opening. Be sure to get a stereo TV with front speakers, as you will be depending on the set's sound system rather than the console's.

Now, build a platform

1 Study the drawings shown here, and determine how many inches you need to elevate your new TV to make it fit the opening. Make sure you don't cover up your controls.

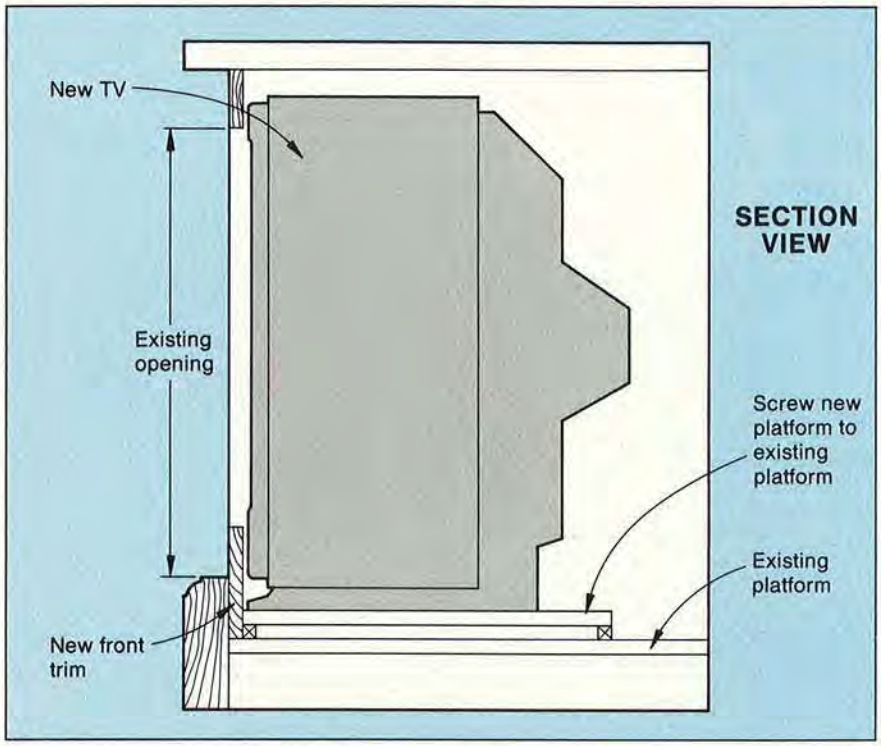
Then, cut a solid-wood front trim piece that conforms to the shape of the TV's base. Next, cut a pair of cleats and a plywood platform to the same length as the front trim piece. The width of the platform depends on the depth of the TV.

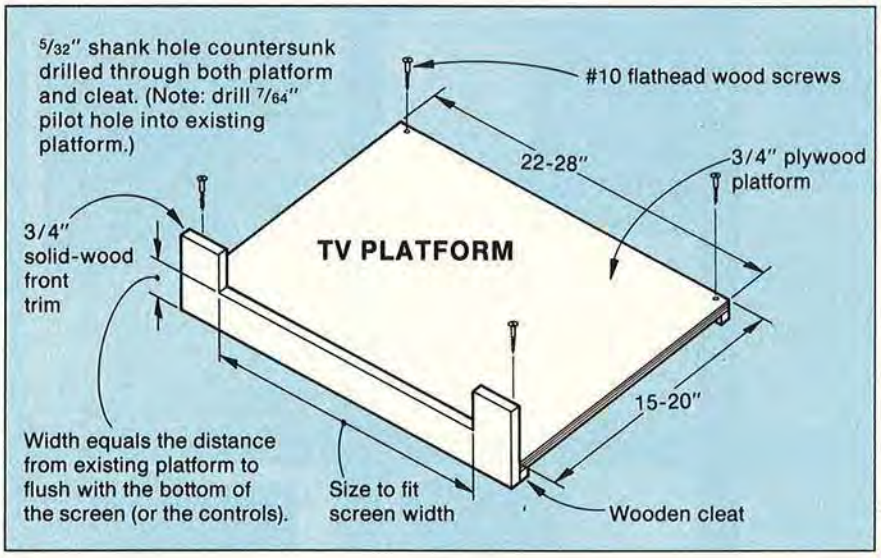
2 Glue and clamp the cleats to the underside of the platform. Later, after the glue dries, glue and clamp the front trim piece to the plywood platform.

3 Slide the platform assembly into position from the back side of the console, and test-fit the TV to ensure that everything's OK. Slide the TV back out.

After masking off and painting the front trim and surrounding wood (or staining and finishing), install the new platform you've just built.

RETROFIT




5/32" shank hole countersunk drilled through both platform and cleat. (Note: drill 7/64" pilot hole into existing platform.)
#10 flathead wood screws
22-28"
3/4" plywood platform
3/4" solid-wood front trim
TV PLATFORM
15-20"
Width equals the distance from existing platform to flush with the bottom of the screen (or the controls).
Size to fit screen width
Wooden cleat

Finishing up

1 Mask off the area surrounding the opening, and apply finish to the new trim piece. (We used matte-black spray enamel to paint the front trim and the adjacent wood. However, you may want to stain and finish the trim to match the color of the console.)

2 While you're waiting for the paint to dry, secure the platform to the console with four flathead wood screws, one in each corner, as shown.

3 Now, slide in your new TV, replace the back panel, and plug in your set. You're in business!

Photographs: Wm. Hopkins, John Hetherington Illustrations: Kim Downing

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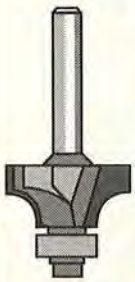

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C1010	3/8"	3/4"	2-1/2"	$6.00
C1011	1/2"	1-3/16"	2-1/2"	$8.00

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C1071	3/4"	11/16"	2-1/8"	14°	$7.00

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C1130	1-3/8"	5/8"	2-1/4"	$16.00

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ASK WOOD

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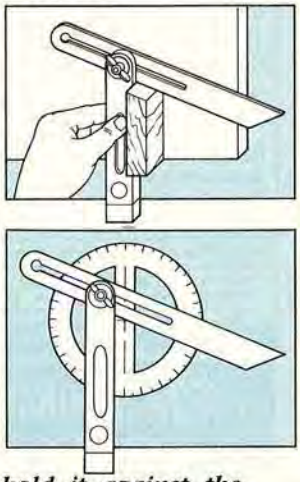
Angle bevels don't lie

As a novice woodworker, I have one problem that continually perplexes me. How do you get the exact angle of something? Is there an instrument other than a protractor that gives precise degrees?

—Mike Shamp, Philadelphia, Pa.



Mike, don't give up on your protractor just yet. By itself, it often falls short in determining an exact angle if you simply place it on the cut edge of a length of wood and make a reading. However, the tool that may solve your problem is the angle bevel. Team it up with your protractor and your accuracy will improve instantly, whether you're measuring inside or outside corners.

First, loosen the swinging blade of the angle bevel and hold it against the angle as shown in Drawing A, above. *Now, tighten the locking nut to fix the blade.*

Next, place the handle of the angle bevel along the straight edge of your protractor as in Drawing B, letting the blade intersect the centerpoint of the protractor's circle. Take your angle-degree reading where the blade intersects the circle's outer edge.

Restoring the bite on your brad-point bits

I've used my brad-point bits quite a lot lately. Consequently, they're getting dull, and if I'm not careful, they overheat. I have looked at various publications covering the sharpening of small tools, but none seem to cover brad-point bits. Do you have any information on sharpening these bits?

—Fred Nuss, Allentown, Pa.

Fred, WOOD *Product/Techniques Editor Bill Krier and Project Builder Jim Boelling agree that letting a local sharpening service restore the cutting edge to your brad-point bits works better than anything else. It costs about $2 a bit for a like-new cutting edge, but for quality bits, it's money well spent.*

What they don't tell you about water-based finishes

In all the information I've read about water-based finishes, one item always gets overlooked. The can the finish comes in rusts! Obviously, the can is coated to prevent this from happening, but the coating scratches when I pry the lid off. After a while, rust particles fall into the finish every time I open the can, rendering my chances at a fine finish impossible. Out of one gallon of water-based polyurethane, which cost me $39.99, I have only been able to use about one quart. Can you help?

—Kevin Patch, Pittsburgh, Pa.

Kevin, as long as we have air to breathe, water and iron will combine to make rust. To work around the problem, mix the one gallon of water-based finish thoroughly after you first bring it home, and then pour it through several layers of cheesecloth and into four one-quart mason jars. Now, screw on the accompanying lids containing rubber or neoprene seals. This will allow you to use and reuse your finish (one quart at a time) and eliminate rust buildup. After each use, wipe the jar's threads and lid dry before resealing the contents.

As for the contaminated finish you still have in your shop, try straining it, too, through cheesecloth while pouring it into the one-quart jars. This should remove the detracting rust particles.

Miffed by mildew

Could you please help me with a problem in our bathroom? I used Valspar Danish Oil Finish on the oak moldings and cupboard doors, but the high humidity in this space causes mildew. What can I do to correct the problem?

—Jim Stewart, Gold River, B.C.

Jim, to rid your woodwork of mildew, try cleaning it with the following solution: ⅓ cup of household detergent and 1 quart of household bleach in a bucket containing 3 quarts of warm water. **Make sure that the detergent you use does not contain ammonia.** *Stir the solution, and then apply it with a scrub brush to remove the mildew. Wipe the moisture from the wood with a rag.*

If the wood dries rough, lightly sand it with 400-grit sandpaper. Then, finish with a water-repellent preservative such as a clear polyurethane. If painting, go with a paint containing a mildewcide. To ensure a mildew-free space in the future, consider buying and installing a bathroom ventilator to remove moist air.

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FINISHING TOUCHES

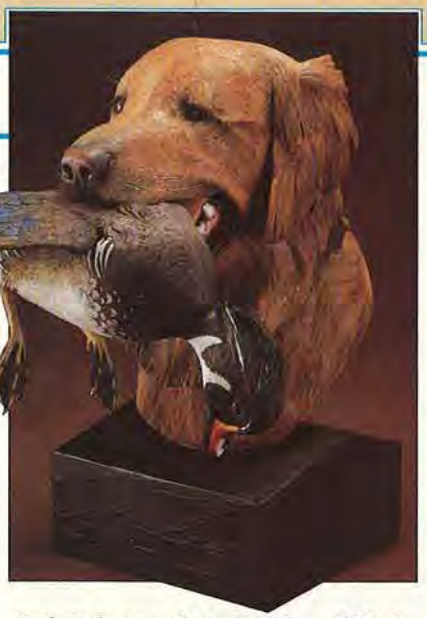
ARE WE KEEPING TREES AWAKE?

Trees need their sleep, according to James R. Fazio in the newsletter *Arbor Day*. Birches and dogwoods are especially sensitive to intense artificial light, such as that produced by high-pressure sodium streetlights. The extra light causes the trees to grow too early in the season or continue growing too late into the year. Then, their tender shoots become frost victims. But, adds Fazio, "...the problem is not common enough to lose sleep over."

CRITTER CARVING

Racine Festival Hall in Racine, Wisconsin, will for the fourth year be the scene of the Dremel/Ducks Unlimited Masters Carving Competition May 16-17. In 1991, 215 carvers entered 530 carvings in hopes of snaring a share of the $22,000 in contest prizes.

This year's spring date, rather than the February timing of past years' competitions, will bring exhibitor and supplier booths outdoors. For information on entering and show hours, contact Dremel at 4915 21st St., Racine, WI 53406, or call 414/554-1390.



Ted Dobson, of Park Ridge, Illinois, won *WOOD* magazine's People's Choice Award at the 1991 Dremel/Ducks Unlimited competition with this carving of a dog with a wood duck.

ADDING CLASS TO A DASH

When it comes to being classy, many Americans want it up front, where it can be seen. At least that's what Richard Fussell of Plainfield, New Jersey, found out concerning auto dashboards.

Fussell owns a company called Comet Dashboards by Hailey, which outfits such costly conveyances as Infinity Q45s and BMW 525s with luxurious wooden dashboards priced at about $2,000.

Brookside Veneers, of Metuchen, New Jersey, supplies Fussell with veneers of madrone and walnut burl, and bird's-eye maple. Including the polyurethane finish, the custom dashes measure less than 1/16"-thick. The company produces 150 dashboards per week.

FRONT AND CENTER: WOOD READERS WHO MAKE A DIFFERENCE

Name: Frank Paxton, Jr.
Age: 72
Home: Kansas City, Mo.
Occupation: Retired lumber company executive
***WOOD*® connection:** Subscriber since 1985

In 1990, Frank retired from the helm of the Kansas City-based Frank Paxton Lumber Company, a major hardwood supplier to industry, cabinet shops, millwork houses, and school shop programs from the Rockies to the Ohio River. While heading the company, he had always advocated manual arts in the schools, fearing that shop curriculums would be abandoned. "Youngsters should learn to use their hands as well as their minds," he told readers in *WOOD* magazine, February 1986.

Frank hasn't changed. As a member of the board of his city's Guadalupe Center, he's helping to develop education programs for the Hispanic population. At fundraisers, he rolls up his sleeves.

"Before, all I'd ever done with nonprofit, volunteer programs was donate money. But with the Guadalupe Center, I'm a worker. At fiestas I pour beer and do all kinds of stuff. Helping people trying to help others—I enjoy that."

On the serious side, Frank wants to curb the school dropout rate among Kansas City's Hispanic children. Hispanic students number about 15 percent of the city's school-age population.

"What we've got in mind is a kind of training school, an alternative to what the public schools offer. Even some major corporations, such as IBM, have offered matching funds. Right now, we've got some programs in the arts, but no woodworking. I want to bring woodworking in, somehow."

Frank Paxton, once at home with hardwoods, now helps Kansas City's Hispanic minority.

For more information regarding Kansas City's Hispanic programs, write: Guadalupe Center, Inc., 1015 W. 23rd St., Kansas City, MO 64108.

Do you know a subscriber who makes a difference? Please send details to: Front and Center, WOOD® magazine, P.O. Box 11454, Des Moines, IA 50336-1454.

Illustration: Jim Stevenson

Engineering A Great Table Saw Wasn't Easy.

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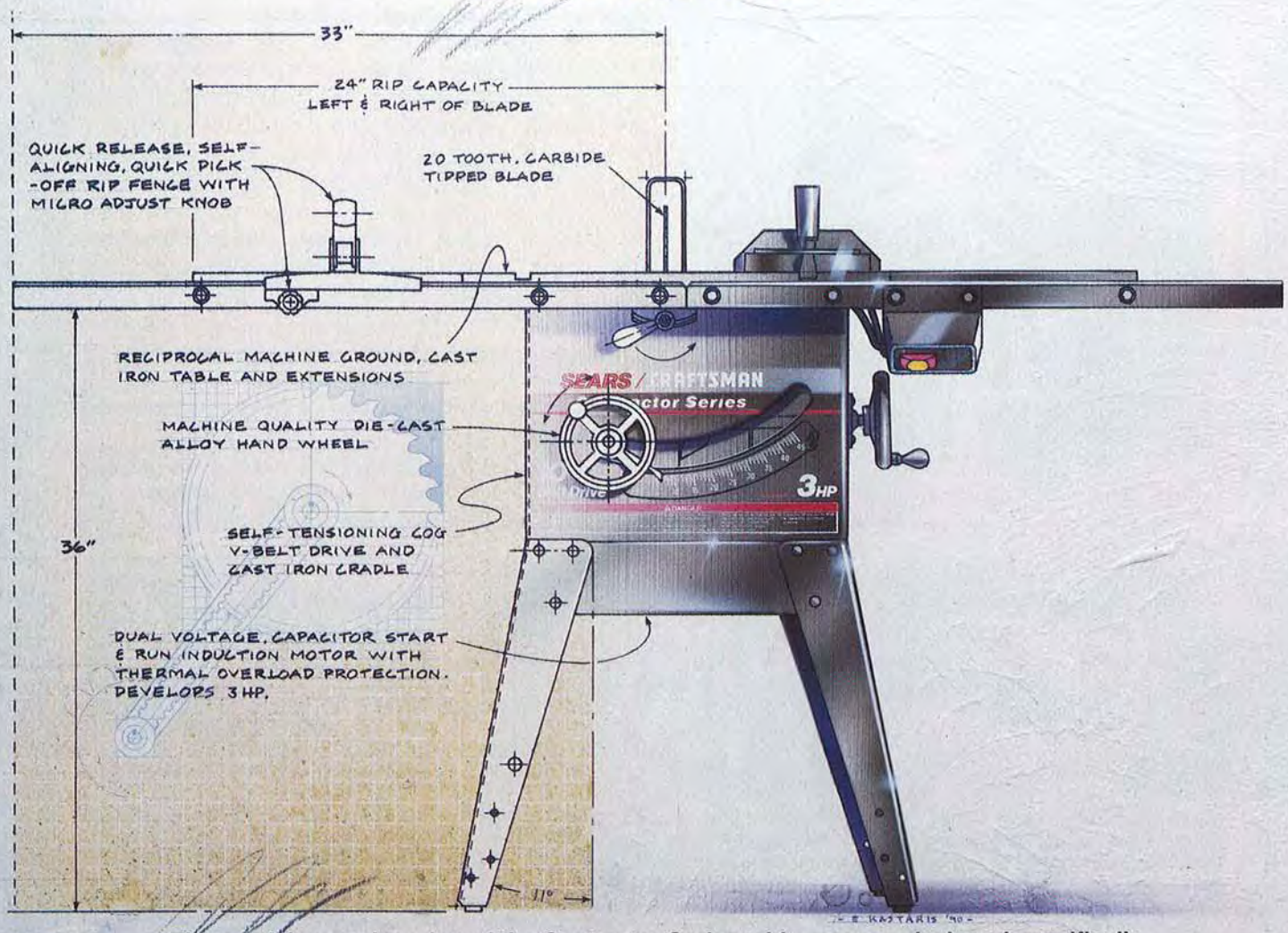
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